Sequence Listing

<110> Baker, Kevin P.
      Ferrara, Napoleone
      Gerber, Hanspeter
      Gerritsen, Mary E.
      Goddard, Audrey
      Godowski, Paul J.
      Gurney, Austin L.
      Hillan, Kenneth J.
      Marsters, Scot A.
      Pan, James
      Paoni, Nicholas F.
      Stephan, Jean-Philippe F.
      Watanabe, Colin K.
      Wood, William I.
      Williams, P.Mickey
      Ye, Weilan

<120> COMPOSITIONS AND METHODS FOR THE DIAGNOSIS AND
      TREATMENT OF DISORDERS INVOLVING ANGIOGENESIS

<130> P3235P1C1

<141> 2002-02-20

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 cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300

 tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350

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3

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                  20                  25                  30

 Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys
                  35                  40                  45

 Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala
                  50                  55                  60

 Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu
                  65                  70                  75

 Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met
                  80                  85                  90

 Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr
                  95                 100                 105

 Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
                 110                 115                 120

 Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
                 125                 130                 135

 Gly Met Ile Tyr Val Leu Val Ser Ser
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tgggaaggtc cgccgcgatg gggaagccct ggctgcgtgc gctacagctg 150

ctgctcctgc tgggcgcgtc gtgggcgcgg gcgggcgccc cgcgctgcac 200
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4

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ctggcggcgc tgcgcatgcg cgtcggccgc cacgaggagc tgttacgcga 350

gctgcagagg ctggcggcgg ccgacggcgc cgtggccggc gaggtgcgcg 400

cgctgcgcaa ggagagccgc ggcctgagcg cgcgcctggg ccagttgcgc 450

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acgcgtccgc cgaggctcag cgcgcagccg cccggttcca ccagctggac 600

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cgcccgcctg gagcgcctgt gcccgggagg cgcgggcggg cagcagcagg 700

tcctgccgcc accccactg gtgcctgtgg ttccggtccg tcttgtgggt 750

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Phe Val Leu Pro Pro Gln Lys Phe Thr Gly Ala Val Cys Trp Ser
                35                  40                  45

Gly Pro Ala Ser Thr Arg Ala Thr Pro Glu Ala Ala Asn Ala Ser
                50                  55                  60

Glu Leu Ala Ala Leu Arg Met Arg Val Gly Arg His Glu Glu Leu
                65                  70                  75

Leu Arg Glu Leu Gln Arg Leu Ala Ala Ala Asp Gly Ala Val Ala
                80                  85                  90

Gly Glu Val Arg Ala Leu Arg Lys Glu Ser Arg Gly Leu Ser Ala
                95                  100                 105

Arg Leu Gly Gln Leu Arg Ala Gln Leu Gln His Glu Ala Gly Pro
                110                 115                 120

Gly Ala Gly Pro Gly Ala Asp Leu Gly Ala Glu Pro Ala Ala Ala
                125                 130                 135

Leu Ala Leu Leu Gly Glu Arg Val Leu Asn Ala Ser Ala Glu Ala
                140                 145                 150

Gln Arg Ala Ala Ala Arg Phe His Gln Leu Asp Val Lys Phe Arg
                155                 160                 165

Glu Leu Ala Gln Leu Val Thr Gln Gln Ser Ser Leu Ile Ala Arg
                170                 175                 180

Leu Glu Arg Leu Cys Pro Gly Gly Ala Gly Gly Gln Gln Gln Val
                185                 190                 195

Leu Pro Pro Pro Pro Leu Val Pro Val Val Pro Val Arg Leu Val
                200                 205                 210

Gly Ser Thr Ser Asp Thr Ser Arg Met Leu Asp Pro Ala Pro Glu
                215                 220                 225

Pro Gln Arg Asp Gln Thr Gln Arg Gln Glu Pro Met Ala Ser
                230                 235                 240

Pro Met Pro Ala Gly His Pro Ala Val Pro Thr Lys Pro Val Gly
                245                 250                 255

Pro Trp Gln Asp Cys Ala Glu Ala Arg Gln Ala Gly His Glu Gln
                260                 265                 270

Ser Gly Val Tyr Glu Leu Arg Val Gly Arg His Val Val Ser Val
                275                 280                 285
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6

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Trp Cys Glu Gln Gln Leu Glu Gly Gly Gly Trp Thr Val Ile Gln
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Arg Arg Gln Asp Gly Ser Val Asn Phe Phe Thr Thr Trp Gln His
                305                 310                 315

Tyr Lys Ala Gly Phe Gly Arg Pro Asp Gly Glu Tyr Trp Leu Gly
                320                 325                 330

Leu Glu Pro Val Tyr Gln Leu Thr Ser Arg Gly Asp His Glu Leu
                335                 340                 345

Leu Val Leu Leu Glu Asp Trp Gly Gly Arg Gly Ala Arg Ala His
                350                 355                 360

Tyr Asp Gly Phe Ser Leu Glu Pro Glu Ser Asp His Tyr Arg Leu
                365                 370                 375

Arg Leu Gly Gln Tyr His Gly Asp Ala Gly Asp Ser Leu Ser Trp
                380                 385                 390

His Asn Asp Lys Pro Phe Ser Thr Val Asp Arg Asp Arg Asp Ser
                395                 400                 405

Tyr Ser Gly Asn Cys Ala Leu Tyr Gln Arg Gly Gly Trp Trp Tyr
                410                 415                 420

His Ala Cys Ala His Ser Asn Leu Asn Gly Val Trp His His Gly
                425                 430                 435

Gly His Tyr Arg Ser Arg Tyr Gln Asp Gly Val Tyr Trp Ala Glu
                440                 445                 450

Phe Arg Gly Gly Ala Tyr Ser Leu Arg Lys Ala Ala Met Leu Ile
                455                 460                 465

Arg Pro Leu Lys Leu
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cggggtaggc tctggaaagg gcccgggaga gaggtggcgt tggtcagaac 300

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acagtgcagt acccactgct gacacaagga gccaaccacg ggaccctgtt 850

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Leu Gly Thr Gly Gly Ala Ala Thr Thr Met Gly Asn Ser Cys Ile
               35                  40                  45

Cys Arg Asp Asp Ser Gly Thr Asp Asp Ser Val Asp Thr Gln Gln
               50                  55                  60

Gln Gln Ala Glu Asn Ser Ala Val Pro Thr Ala Asp Thr Arg Ser
               65                  70                  75

Gln Pro Arg Asp Pro Val Arg Pro Pro Arg Arg Gly Arg Gly Pro
               80                  85                  90

His Glu Pro Arg Arg Lys Lys Gln Asn Val Asp Gly Leu Val Leu
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Asp Thr Leu Ala Val Ile Arg Thr Leu Val Asp Lys
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 accctaagga agaggagttg tacgcatgtc agagaggttg caggctgttt 300

 tcaatttgtc agtttgtgga tgatggaatt gacttaaatc gaactaaatt 350

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Gly Thr Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr
             35                  40                      45
Ala Ser Cys His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr
             50                  55                      60
Tyr Pro Lys Glu Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg
             65                  70                      75
Leu Phe Ser Ile Cys Gln Phe Val Asp Asp Gly Ile Asp Leu Asn
             80                  85                      90
Arg Thr Lys Leu Glu Cys Glu Ser Ala Cys Thr Glu Ala Tyr Ser
             95                 100                     105
Gln Ser Asp Glu Gln Tyr Ala Cys His Leu Gly Cys Gln Asn Gln
            110                 115                     120
Leu Pro Phe Ala Glu Leu Arg Gln Glu Gln Leu Met Ser Leu Met
            125                 130                     135
Pro Lys Met His Leu Leu Phe Pro Leu Thr Leu Val Arg Ser Phe
            140                 145                     150
Trp Ser Asp Met Met Asp Ser Ala Gln Ser Phe Ile Thr Ser Ser
            155                 160                     165
Trp Thr Phe Tyr Leu Gln Ala Asp Asp Gly Lys Ile Val Ile Phe
            170                 175                     180
Gln Ser Lys Pro Glu Ile Gln Tyr Ala Pro His Leu Glu Gln Glu
            185                 190                     195
Pro Thr Asn Leu Arg Glu Ser Ser Leu Ser Lys Met Ser Tyr Leu
            200                 205                     210
Gln Met Arg Asn Ser Gln Ala His Arg Asn Phe Leu Glu Asp Gly
            215                 220                     225
Glu Ser Asp Gly Phe Leu Arg Cys Leu Ser Leu Asn Ser Gly Trp
            230                 235                     240
Ile Leu Thr Thr Thr Leu Val Leu Ser Val Met Val Leu Leu Trp
            245                 250                     255
Ile Cys Cys Ala Thr Val Ala Thr Ala Val Glu Gln Tyr Val Pro
            260                 265                     270
Ser Glu Lys Leu Ser Ile Tyr Gly Asp Leu Glu Phe Met Asn Glu
            275                 280                     285
Gln Lys Leu Asn Arg Tyr Pro Ala Ser Ser Leu Val Val Val Arg
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Ser Lys Thr Glu Asp His Glu Glu Ala Gly Pro Leu Pro Thr Lys
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Val Asn Leu Ala His Ser Glu Ile
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<212> DNA
<213> Homosapiens

<400> 9

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caggggaaga ccgtctttgg ggtggacaga tgcccactga gagctttgg 350

aagtcaaaga agcattcagt gatgtcaaga caagatttac aaactttgtg 400

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tgttttactg cctggtagaa cactaatatt gtgttattaa aatgatggct 550

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ccacagtgat ctctattttc tccctttgcc aaggttaatg aactgttctt 650

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Ala Ile Ser Glu Val Arg Ser Lys Glu Ser Val Arg Leu Cys Gly
                20                  25                  30

Leu Glu Tyr Ile Arg Thr Val Ile Tyr Ile Cys Ala Ser Ser Arg
                35                  40                  45

Trp Arg Arg His Leu Glu Gly Ile Pro Gln Ala Gln Gln Ala Glu
                50                  55                  60

Thr Gly Asn Ser Phe Gln Leu Pro His Lys Arg Glu Phe Ser Glu
                65                  70                  75

Glu Asn Pro Ala Gln Asn Leu Pro Lys Val Asp Ala Ser Gly Glu
                80                  85                  90

Asp Arg Leu Trp Gly Gly Gln Met Pro Thr Glu Glu Leu Trp Lys
                95                  100                 105

Ser Lys Lys His Ser Val Met Ser Arg Gln Asp Leu Gln Thr Leu

11

Cys Cys Thr Asp Gly Cys Ser Met Thr Asp Leu Ser Ala Leu Cys
            125                      130                      135

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<212> DNA
<213> Homosapiens

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 caacaggacc catatcaact tgacaaagga gtgtggtatc ggacgtggga 200

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 tggagtcgga aggaaggcca accaaagaag gaggatatgg ccttaaatcc 500

 tatcagcctc taatgagatt gcgacataag caggaaaaaa atcaagaaag 550

 ttcaagagtc aaaggattta tgattcagga tggccctttt ggatcttgtg 600

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 gagctgcttg cctgaaaaaa caaaagatta ccattgttca caatgaagac 800

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 aaatatgcta ttagatttac aaaatcaaaa atatattatg caagaaaatg 900

 aaaatcctaa tggcgacgac atatctcgga agaagctatt ggtggatcaa 950

 atgtttaaat attttgatgc agacagtaat ggacttgtag atattaatga 1000

 actaactcag gtgataaaac aggaagaact tggcaaggat ctctttgatt 1050

 gtactttgta tgttctattg aaatatgatg attttaatgc tgacaagcac 1100

 ctggctcttg aagaatttta tagagcattc caagtgatcc agttgagtct 1150

 gccagaagat cagaaactaa gcatcactgc agcaactgtg ggacaaagtg 1200

 ctgttctgag ctgtgccatt caaggaaccc tgagacctcc cattatctgg 1250

 aaaaggaaca atattattct aaataattta gatttggaag acatcaatga 1300

```
ctttggagat gatgggtcct tgtatattac taaggttacc acaactcacg 1350

ttggcaatta cacctgctat gcagatggct atgaacaagt ctatcagact 1400

cacatcttcc aagtgaatgt tcctccagtc atcc 1434
```

<210> 12
<211> 343
<212> PRT
<213> Homosapiens

<400> 12

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Met Phe Lys Cys Trp Ser Val Val Leu Val Leu Gly Phe Ile Phe
 1               5                  10                      15

Leu Glu Ser Glu Gly Arg Pro Thr Lys Glu Gly Gly Tyr Gly Leu
                20                  25                      30

Lys Ser Tyr Gln Pro Leu Met Arg Leu Arg His Lys Gln Glu Lys
                35                  40                      45

Asn Gln Glu Ser Ser Arg Val Lys Gly Phe Met Ile Gln Asp Gly
                50                  55                      60

Pro Phe Gly Ser Cys Glu Asn Lys Tyr Cys Gly Leu Gly Arg His
                65                  70                      75

Cys Val Thr Ser Arg Glu Thr Gly Gln Ala Glu Cys Ala Cys Met
                80                  85                      90

Asp Leu Cys Lys Arg His Tyr Lys Pro Val Cys Gly Ser Asp Gly
                95                  100                     105

Glu Phe Tyr Glu Asn His Cys Glu Val His Arg Ala Ala Cys Leu
                110                 115                     120

Lys Lys Gln Lys Ile Thr Ile Val His Asn Glu Asp Cys Phe Phe
                125                 130                     135

Lys Gly Asp Lys Cys Lys Thr Thr Glu Tyr Ser Lys Met Lys Asn
                140                 145                     150

Met Leu Leu Asp Leu Gln Asn Gln Lys Tyr Ile Met Gln Glu Asn
                155                 160                     165

Glu Asn Pro Asn Gly Asp Asp Ile Ser Arg Lys Lys Leu Leu Val
                170                 175                     180

Asp Gln Met Phe Lys Tyr Phe Asp Ala Asp Ser Asn Gly Leu Val
                185                 190                     195

Asp Ile Asn Glu Leu Thr Gln Val Ile Lys Gln Glu Glu Leu Gly
                200                 205                     210

Lys Asp Leu Phe Asp Cys Thr Leu Tyr Val Leu Leu Lys Tyr Asp
                215                 220                     225

Asp Phe Asn Ala Asp Lys His Leu Ala Leu Glu Glu Phe Tyr Arg
                230                 235                     240

Ala Phe Gln Val Ile Gln Leu Ser Leu Pro Glu Asp Gln Lys Leu
                245                 250                     255
```

```
Ser Ile Thr Ala Ala Thr Val Gly Gln Ser Ala Val Leu Ser Cys
            260                 265                 270

Ala Ile Gln Gly Thr Leu Arg Pro Pro Ile Ile Trp Lys Arg Asn
            275                 280                 285

Asn Ile Ile Leu Asn Asn Leu Asp Leu Glu Asp Ile Asn Asp Phe
            290                 295                 300

Gly Asp Asp Gly Ser Leu Tyr Ile Thr Lys Val Thr Thr Thr His
            305                 310                 315

Val Gly Asn Tyr Thr Cys Tyr Ala Asp Gly Tyr Glu Gln Val Tyr
            320                 325                 330

Gln Thr His Ile Phe Gln Val Asn Val Pro Pro Val Ile
            335                 340
```

<210> 13
<211> 1788
<212> DNA
<213> Homosapiens

<400> 13

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tgccgggctg cggggcgcct tgactctccc tccaccctgc ctcctcgggc 50

tccactcgtc tgcccctgga ctcccgtctc tcctgtcct ccggcttccc 100

agagctccct ccttatggca gcagcttccc gcgtctccgg cgcagcttct 150

cagcggacga ccctctcgct ccggggctga gcccagtccc tggatgttgc 200

tgaaactctc gagatcatgc gcgggtttgg ctgctgcttc cccgccgggt 250

gccactgcca ccgccgccgc ctctgctgcc gccgtccgcg ggatgctcag 300

tagcccgctg cccggccccc gcgatcctgt gttcctcgga agccgtttgc 350

tgctgcagag ttgcacgaac tagtcatggt gctgtgggag tccccgcggc 400

agtgcagcag ctggacactt gcgagggct tttgctggct gctgctgctg 450

cccgtcatgc tactcatcgt agcccgcccg gtgaagctcg ctgctttccc 500

tacctcctta agtgactgcc aaacgcccac cggctggaat tgctctggtt 550

atgatgacag agaaaatgat ctcttcctct gtgacaccaa cacctgtaaa 600

tttgatgggg aatgtttaag aattggagac actgtgactt gcgtctgtca 650

gttcaagtgc aacaatgact atgtgcctgt gtgtggctcc aatggggaga 700

gctaccagaa tgagtgttac ctgcgacagg ctgcatgcaa acagcagagt 750

gagatacttg tggtgtcaga aggatcatgt gccacagatg caggatcagg 800

atctggagat ggagtccatg aaggctctgg agaaactagt caaaaggaga 850

catccacctg tgatatttgc cagtttggtg cagaatgtga cgaagatgcc 900

gaggatgtct ggtgtgtgtg taatattgac tgttctcaaa ccaacttcaa 950

tcccctctgc gcttctgatg ggaaatctta tgataatgca tgccaaatca 1000
```

14

```
aagaagcatc gtgtcagaaa caggagaaaa ttgaagtcat gtctttgggt 1050

cgatgtcaag ataacacaac tacaactact aagtctgaag atgggcatta 1100

tgcaagaaca gattatgcag agaatgctaa caaattagaa gaaagtgcca 1150

gagaacacca cataccttgt ccggaacatt acaatggctt ctgcatgcat 1200

gggaagtgtg agcattctat caatatgcag gagccatctt gcaggtgtga 1250

tgctggttat actggacaac actgtgaaaa aaaggactac agtgttctat 1300

acgttgttcc cggtcctgta cgatttcagt atgtcttaat cgcagctgtg 1350

attggaacaa ttcagattgc tgtcatctgt gtggtggtcc tctgcatcac 1400

aaggaaatgc cccagaagca acagaattca cagacagaag caaaatacag 1450

ggcactacag ttcagacaat acaacaagag cgtccacgag gttaatctaa 1500

agggagcatg tttcacagtg gctggactac cgagagcttg gactacacaa 1550

tacagtatta tagacaaaag aataagacaa gagatctaca catgttgcct 1600

tgcatttgtg gtaatctaca ccaatgaaaa catgtactac agctatattt 1650

gattatgtat ggatatattt gaaatagtat acattgtctt gatgtttttt 1700

ctgtaatgta aataaactat ttatatcaca caatatagtt ttttctttcc 1750

catgtatttg ttatatataa taaatactca gtgatgag 1788
```

<210> 14
<211> 374
<212> PRT
<213> Homosapiens

<400> 14

```
Met Val Leu Trp Glu Ser Pro Arg Gln Cys Ser Ser Trp Thr Leu
 1               5                  10                  15

Cys Glu Gly Phe Cys Trp Leu Leu Leu Pro Val Met Leu Leu
                20                  25                  30

Ile Val Ala Arg Pro Val Lys Leu Ala Ala Phe Pro Thr Ser Leu
                35                  40                  45

Ser Asp Cys Gln Thr Pro Thr Gly Trp Asn Cys Ser Gly Tyr Asp
                50                  55                  60

Asp Arg Glu Asn Asp Leu Phe Leu Cys Asp Thr Asn Thr Cys Lys
                65                  70                  75

Phe Asp Gly Glu Cys Leu Arg Ile Gly Asp Thr Val Thr Cys Val
                80                  85                  90

Cys Gln Phe Lys Cys Asn Asn Asp Tyr Val Pro Val Cys Gly Ser
                95                  100                 105

Asn Gly Glu Ser Tyr Gln Asn Glu Cys Tyr Leu Arg Gln Ala Ala
                110                 115                 120
```

15

```
Cys Lys Gln Gln Ser Glu Ile Leu Val Val Ser Glu Gly Ser Cys
            125                 130                     135

Ala Thr Asp Ala Gly Ser Gly Ser Gly Asp Gly Val His Glu Gly
            140                 145                     150


Ser Gly Glu Thr Ser Gln Lys Glu Thr Ser Thr Cys Asp Ile Cys
            155                 160                     165

Gln Phe Gly Ala Glu Cys Asp Glu Asp Ala Glu Asp Val Trp Cys
            170                 175                     180

Val Cys Asn Ile Asp Cys Ser Gln Thr Asn Phe Asn Pro Leu Cys
            185                 190                     195

Ala Ser Asp Gly Lys Ser Tyr Asp Asn Ala Cys Gln Ile Lys Glu
     ʼ      200                 205                     210

Ala Ser Cys Gln Lys Gln Glu Lys Ile Glu Val Met Ser Leu Gly
            215                 220                     225

Arg Cys Gln Asp Asn Thr Thr Thr Thr Thr Lys Ser Glu Asp Gly
            230                 235                     240

His Tyr Ala Arg Thr Asp Tyr Ala Glu Asn Ala Asn Lys Leu Glu
            245                 250                     255

Glu Ser Ala Arg Glu His His Ile Pro Cys Pro Glu His Tyr Asn
            260                 265                     270

Gly Phe Cys Met His Gly Lys Cys Glu His Ser Ile Asn Met Gln
            275                 280                     285

Glu Pro Ser Cys Arg Cys Asp Ala Gly Tyr Thr Gly Gln His Cys
            290                 295                     300

Glu Lys Lys Asp Tyr Ser Val Leu Tyr Val Val Pro Gly Pro Val
            305                 310                     315

Arg Phe Gln Tyr Val Leu Ile Ala Ala Val Ile Gly Thr Ile Gln
            320                 325                     330

Ile Ala Val Ile Cys Val Val Val Leu Cys Ile Thr Arg Lys Cys
            335                 340                     345

Pro Arg Ser Asn Arg Ile His Arg Gln Lys Gln Asn Thr Gly His
            350                 355                     360

Tyr Ser Ser Asp Asn Thr Thr Arg Ala Ser Thr Arg Leu Ile
            365                 370
```

<210> 15
<211> 1475
<212> DNA
<213> Homosapiens

<400> 15
 ggagctcagc ccagtgggca gtctgaagat ggccaattac acgctggcac 50

 cagaggatga atatgatgtc ctcatagaag gtgaactgga gagcgatgag 100

 gcagagcaat gtgacaagta tgacgcccag gcactctcag cccagctggt 150

16

gccatcactc tgctctgctg tgtttgtgat cggtgtcctg gacaatctcc 200

tggttgtgct tatcctggta aaatataaag gactcaaacg cgtggaaaat 250

atctatcttc taaacttggc agtttctaac ttgtgtttct tgcttaccct 300

gcccttctgg gctcatgctg ggggcgatcc catgtgtaaa attctcattg 350

gactgtactt cgtgggcctg tacagtgaga cattttttcaa ttgccttctg 400

actgtgcaaa ggtacctagt gttttttgcac aagggcaact ttttctcagc 450

caggaggagg gtgccctgtg gcatcattac aagtgtcctg gcatgggtaa 500

cagccattct ggccactttg cctgaatacg tggtttataa acctcagatg 550

gaagaccaga aatacaagtg tgcatttagc agaactccct tcctgccagc 600

tgatgagaca ttctggaagc attttctgac tttaaaaatg aacatttcgg 650

ttcttgtcct ccccctattt attttttacat ttctctatgt gcaaatgaga 700

aaaacactaa ggttcaggga gcagaggtat agccttttca agcttgtttt 750

tgccataatg gtagtcttcc ttctgatgtg ggcgccctac aatattgcat 800

ttttcctgtc cactttcaaa gaacacttct ccctgagtga ctgcaagagc 850

agctacaatc tggacaaaag tgttcacatc actaaactca tcgccaccac 900

ccactgctgc atcaaccctc tcctgtatgc gtttcttgat gggacattta 950

gcaaatacct ctgccgctgt ttccatctgc gtagtaacac cccacttcaa 1000

cccagggggc agtctgcaca aggcacatcg agggaagaac ctgaccattc 1050

caccgaagtg taaactagca tccaccaaat gcaagaagaa taaacatgga 1100

ttttcatctt tctgcattat ttcatgtaaa ttttctacac atttgtatac 1150

aaaatcggat acaggaagaa aagggagagg tgagctaaca tttgctaagc 1200

actgaatttg tctcaggcac cgtgcaaggc tctttacaaa cgtgagctcc 1250

ttcgcctcct accacttgtc catagtgtgg ataggactag tctcatttct 1300

ctgagaagaa aactaaggcg cggaaatttg tctaagatca cataactagg 1350

aagtggcaga actgattctc cagccctggt agcatttgct cagagcctac 1400

gcttggtcca gaacatcaaa ctccaaaccc tggggacaaa cgacatgaaa 1450

taaatgtatt ttaaaacatc taaaa 1475

<210> 16
<211> 344
<212> PRT
<213> Homosapiens

<400> 16
 Met Ala Asn Tyr Thr Leu Ala Pro Glu Asp Glu Tyr Asp Val Leu
  1           5              10              15

```
Ile Glu Gly Glu Leu Glu Ser Asp Glu Ala Glu Gln Cys Asp Lys
              20              25                          30

Tyr Asp Ala Gln Ala Leu Ser Ala Gln Leu Val Pro Ser Leu Cys
              35              40                          45

Ser Ala Val Phe Val Ile Gly Val Leu Asp Asn Leu Leu Val Val
              50              55                          60

Leu Ile Leu Val Lys Tyr Lys Gly Leu Lys Arg Val Glu Asn Ile
              65              70                          75

Tyr Leu Leu Asn Leu Ala Val Ser Asn Leu Cys Phe Leu Leu Thr
              80              85                          90

Leu Pro Phe Trp Ala His Ala Gly Gly Asp Pro Met Cys Lys Ile
              95              100                         105

Leu Ile Gly Leu Tyr Phe Val Gly Leu Tyr Ser Glu Thr Phe Phe
              110             115                         120

Asn Cys Leu Leu Thr Val Gln Arg Tyr Leu Val Phe Leu His Lys
              125             130                         135

Gly Asn Phe Phe Ser Ala Arg Arg Arg Val Pro Cys Gly Ile Ile
              140             145                         150

Thr Ser Val Leu Ala Trp Val Thr Ala Ile Leu Ala Thr Leu Pro
              155             160                         165

Glu Tyr Val Val Tyr Lys Pro Gln Met Glu Asp Gln Lys Tyr Lys
              170             175                         180

Cys Ala Phe Ser Arg Thr Pro Phe Leu Pro Ala Asp Glu Thr Phe
              185             190                         195

Trp Lys His Phe Leu Thr Leu Lys Met Asn Ile Ser Val Leu Val
              200             205                         210

Leu Pro Leu Phe Ile Phe Thr Phe Leu Tyr Val Gln Met Arg Lys
              215             220                         225

Thr Leu Arg Phe Arg Glu Gln Arg Tyr Ser Leu Phe Lys Leu Val
              230             235                         240

Phe Ala Ile Met Val Val Phe Leu Leu Met Trp Ala Pro Tyr Asn
              245             250                         255

Ile Ala Phe Phe Leu Ser Thr Phe Lys Glu His Phe Ser Leu Ser
              260             265                         270

Asp Cys Lys Ser Ser Tyr Asn Leu Asp Lys Ser Val His Ile Thr
              275             280                         285

Lys Leu Ile Ala Thr Thr His Cys Cys Ile Asn Pro Leu Leu Tyr
              290             295                         300

Ala Phe Leu Asp Gly Thr Phe Ser Lys Tyr Leu Cys Arg Cys Phe
              305             310                         315

His Leu Arg Ser Asn Thr Pro Leu Gln Pro Arg Gly Gln Ser Ala
              320             325                         330
```

18

Gln Gly Thr Ser Arg Glu Glu Pro Asp His Ser Thr Glu Val
                335                    340

<210> 17
<211> 1838
<212> DNA
<213> Homosapiens

<400> 17
 cggacgcgtg ggcggacgcg tgggcggccc acggcgcccg cgggctgggg 50

 cggtcgcttc ttccttctcc gtggcctacg agggtcccca gcctgggtaa 100

 agatggcccc atggcccccg aagggcctag tcccagctgt gctctggggc 150

 ctcagcctct tcctcaacct cccaggacct atctggctcc agccctctcc 200

 acctccccag tcttctcccc cgcctcagcc ccatccgtgt catacctgcc 250

 ggggactggt tgacagcttt aacaagggcc tggagagaac catccgggac 300

 aactttggag gtggaaacac tgcctgggag gaagagaatt tgtccaaata 350

 caaagacagt gagacccgcc tggtagaggt gctggagggt gtgtgcagca 400

 agtcagactt cgagtgccac cgcctgctgg agctgagtga ggagctggtg 450

 gagagctggt ggtttcacaa gcagcaggag gccccggacc tcttccagtg 500

 gctgtgctca gattccctga gctctgctg ccccgcaggc accttcgggc 550

 cctcctgcct tccctgtcct gggggaacag agaggccctg cggtggctac 600

 gggcagtgtg aaggagaagg gacacgaggg ggcagcgggc actgtgactg 650

 ccaagccggc tacggggggtg aggcctgtgg ccagtgtggc cttggctact 700

 ttgaggcaga acgcaacgcc agccatctgg tatgttcggc ttgttttggc 750

 ccctgtgccc gatgctcagg acctgaggaa tcaaactgtt tgcaatgcaa 800

 gaagggctgg gccctgcatc acctcaagtg tgtagacatt gatgagtgtg 850

 gcacagaggg agccaactgt ggagctgacc aattctgcgt gaacactgag 900

 ggctcctatg agtgccgaga ctgtgccaag gcctgcctag gctgcatggg 950

 ggcagggcca ggtcgctgta agaagtgtag ccctggctat cagcaggtgg 1000

 gctccaagtg tctcgatgtg gatgagtgtg agacagaggt gtgtccggga 1050

 gagaacaagc agtgtgaaaa caccgagggc ggttatcgct gcatctgtgc 1100

 cgagggctac aagcagatgg aaggcatctg tgtgaaggag cagatcccag 1150

 agtcagcagg cttcttctca gagatgacag aagacgagtt ggtggtgctg 1200

 cagcagatgt tctttggcat catcatctgt gcactggcca cgctggctgc 1250

 taagggcgac ttggtgttca ccgccatctt cattggggct gtggcggcca 1300

 tgactggcta ctggttgtca gagcgcagtg accgtgtgct ggagggcttc 1350

19

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atcaagggca gataatcgcg gccaccacct gtaggacctc ctcccaccca 1400

cgctgccccc agagcttggg ctgccctcct gctggacact caggacagct 1450

tggtttattt ttgagagtgg ggtaagcacc cctacctgcc ttacagagca 1500

gcccaggtac ccaggcccgg gcagacaagg cccctggggt aaaaagtagc 1550

cctgaaggtg gataccatga gctcttcacc tggcggggac tggcaggctt 1600

cacaatgtgt gaatttcaaa agttttcct taatggtggc tgctagagct 1650

ttggcccctg cttaggatta ggtggtcctc acagggtgg ggccatcaca 1700

gctccctcct gccagctgca tgctgccagt cctgttctg tgttcaccac 1750

atccccacac cccattgcca cttatttatt catctcagga aataaagaaa 1800

ggtcttggaa agttaaaaaa aaaaaaaaaa aaaaaaaa 1838
```

<210> 18
<211> 420
<212> PRT
<213> Homosapiens

<400> 18

```
Met Ala Pro Trp Pro Pro Lys Gly Leu Val Pro Ala Val Leu Trp
 1               5                  10                  15

Gly Leu Ser Leu Phe Leu Asn Leu Pro Gly Pro Ile Trp Leu Gln
                20                  25                  30

Pro Ser Pro Pro Pro Gln Ser Ser Pro Pro Pro Gln Pro His Pro
                35                  40                  45

Cys His Thr Cys Arg Gly Leu Val Asp Ser Phe Asn Lys Gly Leu
                50                  55                  60

Glu Arg Thr Ile Arg Asp Asn Phe Gly Gly Gly Asn Thr Ala Trp
                65                  70                  75

Glu Glu Glu Asn Leu Ser Lys Tyr Lys Asp Ser Glu Thr Arg Leu
                80                  85                  90

Val Glu Val Leu Glu Gly Val Cys Ser Lys Ser Asp Phe Glu Cys
                95                  100                 105

His Arg Leu Leu Glu Leu Ser Glu Glu Leu Val Glu Ser Trp Trp
                110                 115                 120

Phe His Lys Gln Gln Glu Ala Pro Asp Leu Phe Gln Trp Leu Cys
                125                 130                 135

Ser Asp Ser Leu Lys Leu Cys Cys Pro Ala Gly Thr Phe Gly Pro
                140                 145                 150

Ser Cys Leu Pro Cys Pro Gly Gly Thr Glu Arg Pro Cys Gly Gly
                155                 160                 165

Tyr Gly Gln Cys Glu Gly Glu Gly Thr Arg Gly Gly Ser Gly His
                170                 175                 180
```

```
Cys Asp Cys Gln Ala Gly Tyr Gly Gly Glu Ala Cys Gly Gln Cys
            185                 190                 195

Gly Leu Gly Tyr Phe Glu Ala Glu Arg Asn Ala Ser His Leu Val
            200                 205                 210

Cys Ser Ala Cys Phe Gly Pro Cys Ala Arg Cys Ser Gly Pro Glu
            215                 220                 225

Glu Ser Asn Cys Leu Gln Cys Lys Lys Gly Trp Ala Leu His His
            230                 235                 240

Leu Lys Cys Val Asp Ile Asp Glu Cys Gly Thr Glu Gly Ala Asn
            245                 250           .         255

Cys Gly Ala Asp Gln Phe Cys Val Asn Thr Glu Gly Ser Tyr Glu
            260                 265                 270

Cys Arg Asp Cys Ala Lys Ala Cys Leu Gly Cys Met Gly Ala Gly
            275                 280                 285

Pro Gly Arg Cys Lys Lys Cys Ser Pro Gly Tyr Gln Gln Val Gly
            290                 295                 300

Ser Lys Cys Leu Asp Val Asp Glu Cys Glu Thr Glu Val Cys Pro
            305                 310                 315

Gly Glu Asn Lys Gln Cys Glu Asn Thr Glu Gly Gly Tyr Arg Cys
            320                 325                 330

Ile Cys Ala Glu Gly Tyr Lys Gln Met Glu Gly Ile Cys Val Lys
            335     .           340                 345

Glu Gln Ile Pro Glu Ser Ala Gly Phe Phe Ser Glu Met Thr Glu
            350                 355                 360

Asp Glu Leu Val Val Leu Gln Gln Met Phe Phe Gly Ile Ile Ile
            365                 370                 375

Cys Ala Leu Ala Thr Leu Ala Ala Lys Gly Asp Leu Val Phe Thr
            380                 385                 390

Ala Ile Phe Ile Gly Ala Val Ala Ala Met Thr Gly Tyr Trp Leu
            395                 400                 405

Ser Glu Arg Ser Asp Arg Val Leu Glu Gly Phe Ile Lys Gly Arg
            410                 415                 420
```

<210> 19
<211> 1305
<212> DNA
<213> Homosapiens

<400> 19
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gcccgggact ggcgcaaggt gcccaagcaa ggaaagaaat aatgaagaga 50

cacatgtgtt agctgcagcc ttttgaaaca cgcaagaagg aaatcaatag 100

tgtggacagg gctggaacct ttaccacgct tgttggagta gatgaggaat 150

gggctcgtga ttatgctgac attccagcat gaatctggta gacctgtggt 200
```

```
taacccgttc cctctccatg tgtctcctcc tacaaagttt tgttcttatg 250

atactgtgct ttcattctgc cagtatgtgt cccaagggct gtctttgttc 300

ttcctctggg ggtttaaatg tcacctgtag caatgcaaat ctcaaggaaa 350

tacctagaga tcttcctcct gaaacagtct tactgtatct ggactccaat 400

cagatcacat ctattcccaa tgaaattttt aaggacctcc atcaactgag 450

agttctcaac ctgtccaaaa atggcattga gtttatcgat gagcatgcct 500

tcaaaggagt agctgaaacc ttgcagactc tggacttgtc cgacaatcgg 550

attcaaagtg tgcacaaaaa tgccttcaat aacctgaagg ccagggccag 600

aattgccaac aacccctggc actgcgactg tactctacag caagttctga 650

ggagcatggc gtccaatcat gagacagccc acaacgtgat ctgtaaaacg 700

tccgtgttgg atgaacatgc tggcagacca ttcctcaatg ctgccaacga 750

cgctgacctt tgtaacctcc ctaaaaaaac taccgattat gccatgctgg 800

tcaccatgtt tggctggttc actatggtga tctcatatgt ggtatattat 850

gtgaggcaaa atcaggagga tgcccggaga cacctcgaat acttgaaatc 900

cctgccaagc aggcagaaga aagcagatga acctgatgat attagcactg 950

tggtatagtg tccaaactga ctgtcattga gaaagaaaga aagtagtttg 1000

cgattgcagt agaaataagt ggtttacttc tcccatccat tgtaaacatt 1050

tgaaactttg tatttcagtt ttttttgaat tatgccactg ctgaactttt 1100

aacaaacact acaacataaa taatttgagt ttaggtgatc cacccttaa 1150

ttgtaccccc gatggtatat ttctgagtaa gctactatct gaacattagt 1200

tagatccatc tcactattta ataatgaaat ttattttttt aatttaaaag 1250

caaataaaag cttaactttg aaccatggga aaaaaaaaaa aaaaaaaaaa 1300

aaaca 1305
```

<210> 20
<211> 259
<212> PRT
<213> Homosapiens

<400> 20

```
Met Asn Leu Val Asp Leu Trp Leu Thr Arg Ser Leu Ser Met Cys
  1               5                  10                  15

Leu Leu Leu Gln Ser Phe Val Leu Met Ile Leu Cys Phe His Ser
                 20                  25                  30

Ala Ser Met Cys Pro Lys Gly Cys Leu Cys Ser Ser Ser Gly Gly
                 35                  40                  45

Leu Asn Val Thr Cys Ser Asn Ala Asn Leu Lys Glu Ile Pro Arg
                 50                  55                  60
```

22

```
Asp Leu Pro Pro Glu Thr Val Leu Leu Tyr Leu Asp Ser Asn Gln
                65              70              75

Ile Thr Ser Ile Pro Asn Glu Ile Phe Lys Asp Leu His Gln Leu
                80              85              90


Arg Val Leu Asn Leu Ser Lys Asn Gly Ile Glu Phe Ile Asp Glu
                95             100             105

His Ala Phe Lys Gly Val Ala Glu Thr Leu Gln Thr Leu Asp Leu
               110             115             120

Ser Asp Asn Arg Ile Gln Ser Val His Lys Asn Ala Phe Asn Asn
               125             130             135

Leu Lys Ala Arg Ala Arg Ile Ala Asn Asn Pro Trp His Cys Asp
               140             145             150

Cys Thr Leu Gln Gln Val Leu Arg Ser Met Ala Ser Asn His Glu
               155             160             165

Thr Ala His Asn Val Ile Cys Lys Thr Ser Val Leu Asp Glu His
               170             175             180

Ala Gly Arg Pro Phe Leu Asn Ala Ala Asn Asp Ala Asp Leu Cys
               185             190             195

Asn Leu Pro Lys Lys Thr Thr Asp Tyr Ala Met Leu Val Thr Met
               200             205             210

Phe Gly Trp Phe Thr Met Val Ile Ser Tyr Val Val Tyr Tyr Val
               215             220             225

Arg Gln Asn Gln Glu Asp Ala Arg Arg His Leu Glu Tyr Leu Lys
               230             235             240

Ser Leu Pro Ser Arg Gln Lys Lys Ala Asp Glu Pro Asp Asp Ile
               245             250             255

Ser Thr Val Val
```

```
<210> 21
<211> 2822
<212> DNA
<213> Homosapiens

<400> 21
 cgccaccact gcggccaccg ccaatgaaac gcctcccgct cctagtggtt 50

 ttttccactt tgttgaattg ttcctatact caaaattgca ccaagacacc 100

 ttgtctccca aatgcaaaat gtgaaatacg caatggaatt gaagcctgct 150

 attgcaacat gggattttca ggaaatggtg tcacaatttg tgaagatgat 200

 aatgaatgtg gaaatttaac tcagtcctgt ggcgaaaatg ctaattgcac 250

 taacacagaa ggaagttatt attgtatgtg tgtacctggc ttcagatcca 300

 gcagtaacca agacaggttt atcactaatg atggaaccgt ctgtatagaa 350
```

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aatgtgaatg caaactgcca tttagataat gtctgtatag ctgcaaatat 400

taataaaact ttaacaaaaa tcagatccat aaaagaacct gtggctttgc 450

tacaagaagt ctatagaaat tctgtgacag atctttcacc aacagatata 500

attacatata tagaaatatt agctgaatca tcttcattac taggttacaa 550

gaacaacact atctcagcca aggacaccct ttctaactca actcttactg 600

aatttgtaaa aaccgtgaat aattttgttc aaagggatac atttgtagtt 650

tgggacaagt tatctgtgaa tcataggaga acacatctta caaaactcat 700

gcacactgtt gaacaagcta ctttaaggat atcccagagc ttccaaaaga 750

ccacagagtt tgatacaaat tcaacggata tagctctcaa agttttcttt 800

tttgattcat ataacatgaa acatattcat cctcatatga atatggatgg 850

agactacata aatatatttc caaagagaaa agctgcatat gattcaaatg 900

gcaatgttgc agttgcattt ttatattata agagtattgg tcctttgctt 950

tcatcatctg acaacttctt attgaaacct caaaattatg ataattctga 1000

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acccacccac attatatgaa cttgaaaaaa taacatttac attaagtcat 1100

cgaaaggtca cagataggta taggagtcta tgtgcatttt ggaattactc 1150

acctgatacc atgaatggca gctggtcttc agagggctgt gagctgacat 1200

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gcaattttga tgtcctctgg tccttccatt ggtattaaag attataatat 1300

tcttacaagg atcactcaac taggaataat tatttcactg atttgtcttg 1350

ccatatgcat ttttaccttc tggttcttca gtgaaattca aagcaccagg 1400

acaacaattc acaaaaatct ttgctgtagc ctatttcttg ctgaacttgt 1450

ttttcttgtt gggatcaata caaatactaa taagctcttc tgttcaatca 1500

ttgccggact gctacactac ttctttttag ctgcttttgc atggatgtgc 1550

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accagcatgc ctaatcattc ttgttaatct cttggctttt ggagtcatca 1800

tatacaaagt ttttcgtcac actgcagggt tgaaaccaga agttagttgc 1850

tttgagaaca taaggtcttg tgcaagagga gccctcgctc ttctgttcct 1900

tctcggcacc acctggatct ttgggggttct ccatgttgtg cacgcatcag 1950
```

```
tggttacagc ttacctcttc acagtcagca atgctttcca ggggatgttc 2000

atttttttat tcctgtgtgt tttatctaga aagattcaag aagaatatta 2050

cagattgttc aaaaatgtcc cctgttgttt tggatgttta aggtaaacat 2100

agagaatggt ggataattac aactgcacaa aaataaaaat tccaagctgt 2150

ggatgaccaa tgtataaaaa tgactcatca aattatccaa ttattaacta 2200

ctagacaaaa agtattttaa atcagttttt ctgtttatgc tataggaact 2250

gtagataata aggtaaaatt atgtatcata tagatatact atgttttct 2300

atgtgaaata gttctgtcaa aaatagtatt gcagatattt ggaaagtaat 2350

tggtttctca ggagtgatat cactgcaccc aaggaaagat tttctttcta 2400

acacgagaag tatatgaatg tcctgaagga aaccactggc ttgatatttc 2450

tgtgactcgt gttgcctttg aaactagtcc cctaccacct cggtaatgag 2500

ctccattaca gaaagtggaa cataagagaa tgaaggggca gaatatcaaa 2550

cagtgaaaag ggaatgataa gatgtatttt gaatgaactg ttttttctgt 2600

agactagctg agaaattgtt gacataaaat aaagaattga agaaacacat 2650

tttaccattt tgtgaattgt ctgaactta aatgtccact aaaacaactt 2700

agacttctgt ttgctaaatc tgtttctttt tctaatattc taaaaaaaaa 2750

aaaaaggttt acctccacaa attgaaaaaa aaaaaaaaaa aaaaaaaaaa 2800

aaaaaaaaaa aaaaaaaaaa aa 2822
```

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<210> 22
<211> 690
<212> PRT
<213> Homosapiens

<400> 22
Met Lys Arg Leu Pro Leu Leu Val Val Phe Ser Thr Leu Leu Asn
 1               5                  10                  15

Cys Ser Tyr Thr Gln Asn Cys Thr Lys Thr Pro Cys Leu Pro Asn
                20                  25                  30

Ala Lys Cys Glu Ile Arg Asn Gly Ile Glu Ala Cys Tyr Cys Asn
                35                  40                  45

Met Gly Phe Ser Gly Asn Gly Val Thr Ile Cys Glu Asp Asp Asn
                50                  55                  60

Glu Cys Gly Asn Leu Thr Gln Ser Cys Gly Glu Asn Ala Asn Cys
                65                  70                  75

Thr Asn Thr Glu Gly Ser Tyr Tyr Cys Met Cys Val Pro Gly Phe
                80                  85                  90

Arg Ser Ser Ser Asn Gln Asp Arg Phe Ile Thr Asn Asp Gly Thr
                95                  100                 105
```

```
Val Cys Ile Glu Asn Val Asn Ala Asn Cys His Leu Asp Asn Val
            110                 115                     120

Cys Ile Ala Ala Asn Ile Asn Lys Thr Leu Thr Lys Ile Arg Ser
            125                 130                     135

Ile Lys Glu Pro Val Ala Leu Leu Gln Glu Val Tyr Arg Asn Ser
            140                 145                     150

Val Thr Asp Leu Ser Pro Thr Asp Ile Ile Thr Tyr Ile Glu Ile
            155                 160                     165

Leu Ala Glu Ser Ser Ser Leu Leu Gly Tyr Lys Asn Asn Thr Ile
            170                 175                     180

Ser Ala Lys Asp Thr Leu Ser Asn Ser Thr Leu Thr Glu Phe Val
            185                 190                     195

Lys Thr Val Asn Asn Phe Val Gln Arg Asp Thr Phe Val Val Trp
            200                 205                     210

Asp Lys Leu Ser Val Asn His Arg Arg Thr His Leu Thr Lys Leu
            215                 220                     225

Met His Thr Val Glu Gln Ala Thr Leu Arg Ile Ser Gln Ser Phe
            230                 235                     240

Gln Lys Thr Thr Glu Phe Asp Thr Asn Ser Thr Asp Ile Ala Leu
            245                 250                     255

Lys Val Phe Phe Phe Asp Ser Tyr Asn Met Lys His Ile His Pro
            260                 265                     270

His Met Asn Met Asp Gly Asp Tyr Ile Asn Ile Phe Pro Lys Arg
            275                 280                     285

Lys Ala Ala Tyr Asp Ser Asn Gly Asn Val Ala Val Ala Phe Leu
            290                 295                     300

Tyr Tyr Lys Ser Ile Gly Pro Leu Leu Ser Ser Ser Asp Asn Phe
            305                 310                     315

Leu Leu Lys Pro Gln Asn Tyr Asp Asn Ser Glu Glu Glu Glu Arg
            320                 325                     330

Val Ile Ser Ser Val Ile Ser Val Ser Met Ser Ser Asn Pro Pro
            335                 340                     345

Thr Leu Tyr Glu Leu Glu Lys Ile Thr Phe Thr Leu Ser His Arg
            350                 355                     360

Lys Val Thr Asp Arg Tyr Arg Ser Leu Cys Ala Phe Trp Asn Tyr
            365                 370                     375

Ser Pro Asp Thr Met Asn Gly Ser Trp Ser Ser Glu Gly Cys Glu
            380                 385                     390

Leu Thr Tyr Ser Asn Glu Thr His Thr Ser Cys Arg Cys Asn His
            395                 400                     405

Leu Thr His Phe Ala Ile Leu Met Ser Ser Gly Pro Ser Ile Gly
            410                 415                     420
```

26

```
Ile Lys Asp Tyr Asn Ile Leu Thr Arg Ile Thr Gln Leu Gly Ile
                425                 430                 435

Ile Ile Ser Leu Ile Cys Leu Ala Ile Cys Ile Phe Thr Phe Trp
                440                 445                 450

Phe Phe Ser Glu Ile Gln Ser Thr Arg Thr Thr Ile His Lys Asn
                455                 460                 465

Leu Cys Cys Ser Leu Phe Leu Ala Glu Leu Val Phe Leu Val Gly
                470                 475                 480

Ile Asn Thr Asn Thr Asn Lys Leu Phe Cys Ser Ile Ile Ala Gly
                485                 490                 495

Leu Leu His Tyr Phe Phe Leu Ala Ala Phe Ala Trp Met Cys Ile
                500                 505                 510

Glu Gly Ile His Leu Tyr Leu Ile Val Val Gly Val Ile Tyr Asn
                515                 520                 525

Lys Gly Phe Leu His Lys Asn Phe Tyr Ile Phe Gly Tyr Leu Ser
                530                 535                 540

Pro Ala Val Val Val Gly Phe Ser Ala Ala Leu Gly Tyr Arg Tyr
                545                 550                 555

Tyr Gly Thr Thr Lys Val Cys Trp Leu Ser Thr Glu Asn Asn Phe
                560                 565                 570

Ile Trp Ser Phe Ile Gly Pro Ala Cys Leu Ile Ile Leu Val Asn
                575                 580                 585

Leu Leu Ala Phe Gly Val Ile Ile Tyr Lys Val Phe Arg His Thr
                590                 595                 600

Ala Gly Leu Lys Pro Glu Val Ser Cys Phe Glu Asn Ile Arg Ser
                605                 610                 615

Cys Ala Arg Gly Ala Leu Ala Leu Leu Phe Leu Leu Gly Thr Thr
                620                 625                 630

Trp Ile Phe Gly Val Leu His Val Val His Ala Ser Val Val Thr
                635                 640                 645

Ala Tyr Leu Phe Thr Val Ser Asn Ala Phe Gln Gly Met Phe Ile
                650                 655                 660

Phe Leu Phe Leu Cys Val Leu Ser Arg Lys Ile Gln Glu Glu Tyr
                665                 670                 675

Tyr Arg Leu Phe Lys Asn Val Pro Cys Cys Phe Gly Cys Leu Arg
                680                 685                 690
```

<210> 23
<211> 1686
<212> DNA
<213> Homosapiens

<400> 23
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tccttctagc cttaaatttc agctcatcac cttcacctgc cttggtcatg 100
```

```
gctctgctat tctccttgat ccttgccatt tgcaccagac ctggattcct 150

agcgtctcca tctggagtgc ggctggtggg gggcctccac cgctgtgaag 200

ggcgggtgga ggtggaacag aaaggccagt ggggcaccgt gtgtgatgac 250

ggctgggaca ttaaggacgt ggctgtgttg tgccgggagc tgggctgtgg 300

agctgccagc ggaaccccta gtggtatttt gtatgagcca ccagcagaaa 350

aagagcaaaa ggtcctcatc caatcagtca gttgcacagg aacagaagat 400

acattggctc agtgtgagca agaagaagtt tatgattgtt cacatgatga 450

agatgctggg gcatcgtgtg agaacccaga gagctctttc tccccagtcc 500

cagagggtgt caggctggct gacggccctg ggcattgcaa gggacgcgtg 550

gaagtgaagc accagaacca gtggtatacc gtgtgccaga caggctggag 600

cctccgggcc gcaaaggtgg tgtgccggca ctgggatgt gggagggctg 650

tactgactca aaaacgctgc aacaagcatg cctatggccg aaaacccatc 700

tggctgagcc agatgtcatg ctcaggacga gaagcaaccc ttcaggattg 750

cccttctggg ccttggggga agaacacctg caaccatgat gaagacacgt 800

gggtcgaatg tgaagatccc tttgacttga gactagtagg aggagacaac 850

ctctgctctg ggcgactgga ggtgctgcac aagggcgtat ggggctctgt 900

ctgtgatgac aactggggag aaaaggagga ccaggtggta tgcaagcaac 950

tgggctgtgg gaagtccctc tctccctcct tcagagaccg gaaatgctat 1000

ggccctgggg ttggccgcat ctggctggat aatgttcgtt gctcagggga 1050

ggagcagtcc ctggagcagt gccagcacag attttggggg tttcacgact 1100

gcacccacca ggaagatgtg gctgtcatct gctcagtgta ggtgggcatc 1150

atctaatctg ttgagtgcct gaatagaaga aaaacacaga agaagggagc 1200

atttactgtc tacatgactg catgggatga acactgatct tcttctgccc 1250

ttggactggg acttatactt ggtgcccctg attctcaggc cttcagagtt 1300

ggatcagaac ttacaacatc aggtctagtt ctcaggccat cagacatagt 1350

ttggaactac atcaccacct ttcctatgtc tccacattgc acacagcaga 1400

ttcccagcct ccataattgt gtgtatcaac tacttaaata cattctcaca 1450

cacacacaca cacacacaca cacacacaca cacacataca ccatttgtcc 1500

tgtttctctg aagaactctg acaaaataca gattttggta ctgaaagaga 1550

ttctagagga acggaatttt aaggataaat tttctgaatt ggttatgggg 1600

tttctgaaat tggctctata atctaattag atataaaatt ctggtaactt 1650

tatttacaat aataaagata gcactatgtg ttcaaa 1686
```

<210> 24
<211> 347
<212> PRT
<213> Homosapiens

<400> 24

```
Met Ala Leu Leu Phe Ser Leu Ile Leu Ala Ile Cys Thr Arg Pro
 1               5                  10                  15

Gly Phe Leu Ala Ser Pro Ser Gly Val Arg Leu Val Gly Gly Leu
                20                  25                  30

His Arg Cys Glu Gly Arg Val Glu Val Glu Gln Lys Gly Gln Trp
                35                  40                  45

Gly Thr Val Cys Asp Asp Gly Trp Asp Ile Lys Asp Val Ala Val
                50                  55                  60

Leu Cys Arg Glu Leu Gly Cys Gly Ala Ala Ser Gly Thr Pro Ser
                65                  70                  75

Gly Ile Leu Tyr Glu Pro Pro Ala Glu Lys Glu Gln Lys Val Leu
                80                  85                  90

Ile Gln Ser Val Ser Cys Thr Gly Thr Glu Asp Thr Leu Ala Gln
                95                  100                 105

Cys Glu Gln Glu Glu Val Tyr Asp Cys Ser His Asp Glu Asp Ala
                110                 115                 120

Gly Ala Ser Cys Glu Asn Pro Glu Ser Ser Phe Ser Pro Val Pro
                125                 130                 135

Glu Gly Val Arg Leu Ala Asp Gly Pro Gly His Cys Lys Gly Arg
                140                 145                 150

Val Glu Val Lys His Gln Asn Gln Trp Tyr Thr Val Cys Gln Thr
                155                 160                 165

Gly Trp Ser Leu Arg Ala Ala Lys Val Val Cys Arg Gln Leu Gly
                170                 175                 180

Cys Gly Arg Ala Val Leu Thr Gln Lys Arg Cys Asn Lys His Ala
                185                 190                 195

Tyr Gly Arg Lys Pro Ile Trp Leu Ser Gln Met Ser Cys Ser Gly
                200                 205                 210

Arg Glu Ala Thr Leu Gln Asp Cys Pro Ser Gly Pro Trp Gly Lys
                215                 220                 225

Asn Thr Cys Asn His Asp Glu Asp Thr Trp Val Glu Cys Glu Asp
                230                 235                 240

Pro Phe Asp Leu Arg Leu Val Gly Gly Asp Asn Leu Cys Ser Gly
                245                 250                 255

Arg Leu Glu Val Leu His Lys Gly Val Trp Gly Ser Val Cys Asp
                260                 265                 270

Asp Asn Trp Gly Glu Lys Glu Asp Gln Val Val Cys Lys Gln Leu
                275                 280                 285
```

29

```
Gly Cys Gly Lys Ser Leu Ser Pro Ser Phe Arg Asp Arg Lys Cys
              290                 295                 300

Tyr Gly Pro Gly Val Gly Arg Ile Trp Leu Asp Asn Val Arg Cys
              305                 310                 315

Ser Gly Glu Glu Gln Ser Leu Glu Gln Cys Gln His Arg Phe Trp
              320                 325                 330

Gly Phe His Asp Cys Thr His Gln Glu Asp Val Ala Val Ile Cys
              335                 340                 345

Ser Val
```

```
<210> 25
<211> 2197
<212> DNA
<213> Homosapiens

<400> 25
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 tgtggcgatg tccactgggg ctactgctgt tgctgccgct ggctggccac  150

 ttggctctgg gtgcccagca gggtcgtggg cgccgggagc tagcaccggg  200

 tctgcacctg cggggcatcc gggacgcggg aggccggtac tgccaggagc  250

 aggacctgtg ctgccgcggc cgtgccgacg actgtgccct gccctacctg  300

 ggcgccatct gttactgtga cctcttctgc aaccgcacgg tctccgactg  350

 ctgccctgac ttctgggact tctgcctcgg cgtgccaccc ccttttcccc  400

 cgatccaagg atgtatgcat ggaggtcgta tctatccagt cttgggaacg  450

 tactgggaca actgtaaccg ttgcacctgc aggagaaca ggcagtggca  500

 tggtggatcc agacatgatc aaagccatca accagggcaa ctatggctgg  550

 caggctggga accacagcgc cttctggggc atgaccctgg atgagggcat  600

 tcgctaccgc ctgggcacca tccgcccatc ttcctcggtc atgaacatgc  650

 atgaaattta tacagtgctg aacccagggg aggtgcttcc cacagccttc  700

 gaggcctctg agaagtggcc caacctgatt catgagcctc ttgaccaagg  750

 caactgtgca ggctcctggg ccttctccac agcagctgtg gcatccgatc  800

 gtgtctcaat ccattctctg gacacatga cgcctgtcct gtcgccccag  850

 aacctgctgt cttgtgacac ccaccagcag cagggctgcc gcggtgggcg  900

 tctcgatggt gcctggtggt cctgcgtcg ccgaggggtg gtgtctgacc  950

 actgctaccc cttctcgggc cgtgaacgag acgaggctgg ccctgcgccc 1000

 ccctgtatga tgcacagccg agccatgggt cggggcaagc gccaggccac 1050
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tgcccactgc cccaacagct atgttaataa caatgacatc taccaggtca 1100

ctcctgtcta ccgcctcggc tccaacgaca aggagatcat gaaggagctg 1150

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agccgcgggc aggcgagact ggcggagccc ccagacctcc cagtggggac 1700

ggggcagggc ctggcctggg aagagcacag ctgcagatcc caggcctctg 1750

gcgcccccac tcaagactac caaagccagg acacctcaag tctccagccc 1800

caatacccca ccccaatccc gtattctttt tttttttttt ttagacaggg 1850

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tagctgggac tacaggtgca ccaccacacc tggctaattt ttgtattttt 2000

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ttcttttcac tgttttaaaa taaaaccaaa gtattgataa aaaaaaa 2197
```

<210> 26
<211> 164
<212> PRT
<213> Homosapiens

<400> 26

```
Met Trp Arg Cys Pro Leu Gly Leu Leu Leu Leu Pro Leu Ala
 1               5                  10                  15

Gly His Leu Ala Leu Gly Ala Gln Gln Gly Arg Gly Arg Arg Glu
                  20                  25                  30

Leu Ala Pro Gly Leu His Leu Arg Gly Ile Arg Asp Ala Gly Gly
                  35                  40                  45

Arg Tyr Cys Gln Glu Gln Asp Leu Cys Cys Arg Gly Arg Ala Asp
                  50                  55                  60
```

31

```
Asp Cys Ala Leu Pro Tyr Leu Gly Ala Ile Cys Tyr Cys Asp Leu
                65              70              75

Phe Cys Asn Arg Thr Val Ser Asp Cys Cys Pro Asp Phe Trp Asp
                80              85              90

Phe Cys Leu Gly Val Pro Pro Phe Pro Pro Ile Gln Gly Cys
                95              100             105

Met His Gly Gly Arg Ile Tyr Pro Val Leu Gly Thr Tyr Trp Asp
                110             115             120

Asn Cys Asn Arg Cys Thr Cys Gln Glu Asn Arg Gln Trp His Gly
                125             130             135

Gly Ser Arg His Asp Gln Ser His Gln Pro Gly Gln Leu Trp Leu
                140             145             150

Ala Gly Trp Glu Pro Gln Arg Leu Leu Gly His Asp Pro Gly
                155             160
```

<210> 27
<211> 2005
<212> DNA
<213> Homosapiens

<400> 27

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cccacgcgtc cggcaggttt ttcttcaagc caagaaggac acggattggc 50

tgaaggagaa agtgcagagc ttgcagacac tggctgccaa caactctgcg 100

ttggccaaag ccaacaacga caccctggag gatatgaaca gccagctcaa 150

ctcattcaca ggtcagatgg agaacatcac cactatctct caagccaacg 200

agcagaacct gaaagacctg caggacttac acaaagatgc agagaataga 250

acagccatca agttcaacca actggaggaa cgcttccagc tctttgagac 300

ggatattgtg aacatcatta gcaatatcag ttacacagcc caccacctgc 350

ggacgctgac cagcaatcta aatgaagtca ggaccacttg cacagatacc 400

ttaccaaaca cacagatgat ctgacctcct tgaataatac cctggccaac 450

atccgtttgg attctgtttc tctcaggatg caacaagatt tgatgaggtc 500

gaggttagac actgaagtag ccaacttatc agtgattatg aagaaatga 550

agctagtaga ctccaagcat ggtcagctca tcaagaattt tacaatacta 600

caaggtccac cgggccccag gggtccaaga ggtgacagag gatcccaggg 650

acccctggc ccaactggca acaagggaca gaaaggagag aaggggagc 700

ctggaccacc tggccctgcg ggtgagagag gcccaattgg accagctggt 750

ccccccggag agcgtggcgg caaaggatct aaaggctccc agggccccaa 800

aggctcccgt ggttcccctg gaagcccgg ccctcagggc ccagtgggg 850

acccaggccc cccgggccca ccaggcaaag agggactccc cggccctcag 900
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32

ggcctcctg gcttccaggg acttcaggggc accgttggggg agcctggggt 950

gcctggacct cggggactgc caggcttgcc tggggtacca ggcatgccag 1000

gccccaaggg ccccccccggc cctcctggcc catcaggagc ggtggtgccc 1050

ctggccctgc agaatgagcc aaccccggca ccggaggaca atagctgccc 1100

gcctcactgg aagaacttca cagacaaatg ctactatttt tcagttgaga 1150

aagaaatttt tgaggatgca aagcttttct gtgaagacaa gtcttcacat 1200

cttgtttttca taaacactag agaggaacag caatggataa aaaaacagat 1250

ggtagggaga gagagccact ggatcggcct cacagactca gagcgtgaaa 1300

atgaatggaa gtggctggat gggacatctc cagactacaa aaattggaaa 1350

gctggacagc cggataactg gggtcatggc catgggccag gagaagactg 1400

tgctgggttg atttatgctg ggcagtggaa cgattccaa tgtgaagacg 1450

tcaataactt catttgcgaa aaagacaggg agacagtact gtcatctgca 1500

ttataacgga ctgtgatggg atcacatgag caaatttttca gctctcaaag 1550

gcaaaggaca ctcctttcta attgcatcac cttctcatca gattgaaaaa 1600

aaaaaagcac tgaaaaccaa ttactgaaaa aaaattgaca gctagtgttt 1650

tttaccatcc gtcattaccc aaagacttgg gaactaaaat gttccccagg 1700

gtgatatgct gattttcatt gtgcacatgg actgaatcac atagattctc 1750

ctccgtcagt aaccgtgcga ttatacaaat tatgtcttcc aaagtatgga 1800

acactccaat cagaaaaagg ttatcattgg tcgttgagtt atgggaagaa 1850

cttaagcata tactgtgtaa acagtgccat acatttctaa aatcccaagt 1900

gtaggaaaaa tatgcagaca tacagatata taggccaact attagtaata 1950

atatgaaata tacttaaaga gcttttaaaa ctttgtatttt ttgtacaaaa 2000

aaaaa 2005

<210> 28
<211> 342
<212> PRT
<213> Homosapiens

<400> 28
Met Gln Gln Asp Leu Met Arg Ser Arg Leu Asp Thr Glu Val Ala
  1               5                  10                  15

Asn Leu Ser Val Ile Met Glu Glu Met Lys Leu Val Asp Ser Lys
                 20                  25                  30

His Gly Gln Leu Ile Lys Asn Phe Thr Ile Leu Gln Gly Pro Pro
                 35                  40                  45

Gly Pro Arg Gly Pro Arg Gly Asp Arg Gly Ser Gln Gly Pro Pro
                 50                  55                  60

33

```
Gly Pro Thr Gly Asn Lys Gly Gln Lys Gly Glu Lys Gly Glu Pro
                65              70              75

Gly Pro Pro Gly Pro Ala Gly Glu Arg Gly Pro Ile Gly Pro Ala
                80              85              90

Gly Pro Pro Gly Glu Arg Gly Gly Lys Gly Ser Lys Gly Ser Gln
                95              100             105

Gly Pro Lys Gly Ser Arg Gly Ser Pro Gly Lys Pro Gly Pro Gln
                110             115             120

Gly Pro Ser Gly Asp Pro Gly Pro Pro Gly Pro Pro Gly Lys Glu
                125             130             135

Gly Leu Pro Gly Pro Gln Gly Pro Pro Gly Phe Gln Gly Leu Gln
                140             145             150

Gly Thr Val Gly Glu Pro Gly Val Pro Gly Pro Arg Gly Leu Pro
                155             160             165

Gly Leu Pro Gly Val Pro Gly Met Pro Gly Pro Lys Gly Pro Pro
                170             175             180

Gly Pro Pro Gly Pro Ser Gly Ala Val Val Pro Leu Ala Leu Gln
                185             190             195

Asn Glu Pro Thr Pro Ala Pro Glu Asp Asn Ser Cys Pro Pro His
                200             205             210

Trp Lys Asn Phe Thr Asp Lys Cys Tyr Tyr Phe Ser Val Glu Lys
                215             220             225

Glu Ile Phe Glu Asp Ala Lys Leu Phe Cys Glu Asp Lys Ser Ser
                230             235             240

His Leu Val Phe Ile Asn Thr Arg Glu Glu Gln Gln Trp Ile Lys
                245             250             255

Lys Gln Met Val Gly Arg Glu Ser His Trp Ile Gly Leu Thr Asp
                260             265             270

Ser Glu Arg Glu Asn Glu Trp Lys Trp Leu Asp Gly Thr Ser Pro
                275             280             285

Asp Tyr Lys Asn Trp Lys Ala Gly Gln Pro Asp Asn Trp Gly His
                290             295             300

Gly His Gly Pro Gly Glu Asp Cys Ala Gly Leu Ile Tyr Ala Gly
                305             310             315

Gln Trp Asn Asp Phe Gln Cys Glu Asp Val Asn Asn Phe Ile Cys
                320             325             330

Glu Lys Asp Arg Glu Thr Val Leu Ser Ser Ala Leu
                335             340
```

<210> 29
<211> 2454
<212> DNA
<213> Homosapiens

<400> 29

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caccaggact gtgttgaagg gtgttttttt tcttttaaat gtaatacctc 100

ctcatctttt cttcttacac agtgtctgag aacatttaca ttatagataa 150

gtagtacatg gtggataact tctacttta ggaggactac tctcttctga 200

cagtcctaga ctggtcttct acactaagac accatgaagg agtatgtgct 250

cctattattc ctggctttgt gctctgccaa acccttcttt agcccttcac 300

acatcgcact gaagaatatg atgctgaagg atatggaaga cacagatgat 350

gatgatgatg atgatgatga tgatgatgat gatgaggaca actctctttt 400

tccaacaaga gagccaagaa gccatttttt tccatttgat ctgtttccaa 450

tgtgtccatt tggatgtcag tgctattcac gagttgtaca ttgctcagat 500

ttaggtttga cctcagtccc aaccaacatt ccatttgata ctcgaatgct 550

tgatcttcaa aacaataaaa ttaaggaaat caaagaaaat gattttaaag 600

gactcacttc actttatggt ctgatcctga acaacaacaa gctaacgaag 650

attcacccaa aagcctttct aaccacaaag aagttgcgaa ggctgtatct 700

gtcccacaat caactaagtg aaataccact taatcttccc aaatcattag 750

cagaactcag aattcatgaa aataaagtta agaaaataca aaaggacaca 800

ttcaaaggaa tgaatgcttt acacgttttg gaaatgagtg caaaccctct 850

tgataataat gggatagagc caggggcatt tgaaggggtg acggtgttcc 900

atatcagaat tgcagaagca aaactgacct cagttcctaa aggcttacca 950

ccaactttat tggagcttca cttagattat aataaaattt caacagtgga 1000

acttgaggat tttaaacgat acaaagaact acaaaggctg ggcctaggaa 1050

acaacaaaat cacagatatc gaaaatggga gtcttgctaa cataccacgt 1100

gtgagagaaa tacatttgga aaacaataaa ctaaaaaaaa tcccttcagg 1150

attaccagag ttgaaatacc tccagataat cttccttcat tctaattcaa 1200

ttgcaagagt gggagtaaat gacttctgtc aacagtgcc aaagatgaag 1250

aaatctttat acagtgcaat aagtttattc aacaacccgg tgaaatactg 1300

ggaaatgcaa cctgcaacat ttcgttgtgt tttgagcaga atgagtgttc 1350

agcttgggaa ctttggaatg taataattag taattggtaa tgtccattta 1400

atataagatt caaaaatccc tacatttgga atacttgaac tctattaata 1450

atggtagtat tatatataca agcaaatatc tattctcaag tggtaagtcc 1500

actgacttat tttatgacaa gaaatttcaa cggaattttg ccaaactatt 1550

gatacataag gggttgagag aaacaagcat ctattgcagt ttcctttttg 1600
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cgtacaaatg atcttacata aatctcatgc ttgaccattc ctttcttcat 1650

aacaaaaaag taagatattc ggtatttaac actttgttat caagcacatt 1700

ttaaaaagaa ctgtactgta aatggaatgc ttgacttagc aaaatttgtg 1750

ctctttcatt tgctgttaga aaaacagaat taacaaagac agtaatgtga 1800

agagtgcatt acactattct tattctttag taacttgggt agtactgtaa 1850

tatttttaat catcttaaag tatgatttga tataatctta ttgaaattac 1900

cttatcatgt cttagagccc gtctttatgt ttaaaactaa tttcttaaaa 1950

taaagccttc agtaaatgtt cattaccaac ttgataaatg ctactcataa 2000

gagctggttt ggggctatag catatgcttt tttttttta attattacct 2050

gatttaaaaa tctctgtaaa aacgtgtagt gtttcataaa atctgtaact 2100

cgcattttaa tgatccgcta ttataagctt ttaatagcat gaaaattgtt 2150

aggctatata acattgccac ttcaactcta aggaatattt ttgagatatc 2200

cctttggaag accttgcttg gaagagcctg gacactaaca attctacacc 2250

aaattgtctc ttcaaatacg tatggactgg ataactctga gaaacacatc 2300

tagtataact gaataagcag agcatcaaat taaacagaca gaaaccgaaa 2350

gctctatata aatgctcaga gttctttatg tatttcttat tggcattcaa 2400

catatgtaaa atcagaaaac agggaaattt tcattaaaaa tattggtttg 2450

aaat 2454
```

<210> 30
<211> 379
<212> PRT
<213> Homosapiens

<400> 30

```
Met Lys Glu Tyr Val Leu Leu Leu Phe Leu Ala Leu Cys Ser Ala
 1               5                  10                  15

Lys Pro Phe Phe Ser Pro Ser His Ile Ala Leu Lys Asn Met Met
                20                  25                  30

Leu Lys Asp Met Glu Asp Thr Asp Asp Asp Asp Asp Asp Asp
                35                  40                  45

Asp Asp Asp Asp Asp Glu Asp Asn Ser Leu Phe Pro Thr Arg Glu
                50                  55                  60

Pro Arg Ser His Phe Phe Pro Phe Asp Leu Phe Pro Met Cys Pro
                65                  70                  75

Phe Gly Cys Gln Cys Tyr Ser Arg Val Val His Cys Ser Asp Leu
                80                  85                  90

Gly Leu Thr Ser Val Pro Thr Asn Ile Pro Phe Asp Thr Arg Met
                95                  100                 105
```

```
Leu Asp Leu Gln Asn Asn Lys Ile Lys Glu Ile Lys Glu Asn Asp
            110             115             120

Phe Lys Gly Leu Thr Ser Leu Tyr Gly Leu Ile Leu Asn Asn Asn
            125             130             135

Lys Leu Thr Lys Ile His Pro Lys Ala Phe Leu Thr Thr Lys Lys
            140             145             150

Leu Arg Arg Leu Tyr Leu Ser His Asn Gln Leu Ser Glu Ile Pro
            155             160             165

Leu Asn Leu Pro Lys Ser Leu Ala Glu Leu Arg Ile His Glu Asn
            170             175             180

Lys Val Lys Lys Ile Gln Lys Asp Thr Phe Lys Gly Met Asn Ala
            185             190             195

Leu His Val Leu Glu Met Ser Ala Asn Pro Leu Asp Asn Asn Gly
            200             205             210

Ile Glu Pro Gly Ala Phe Glu Gly Val Thr Val Phe His Ile Arg
            215             220             225

Ile Ala Glu Ala Lys Leu Thr Ser Val Pro Lys Gly Leu Pro Pro
            230             235             240

Thr Leu Leu Glu Leu His Leu Asp Tyr Asn Lys Ile Ser Thr Val
            245             250             255

Glu Leu Glu Asp Phe Lys Arg Tyr Lys Glu Leu Gln Arg Leu Gly
            260             265             270

Leu Gly Asn Asn Lys Ile Thr Asp Ile Glu Asn Gly Ser Leu Ala
            275             280             285

Asn Ile Pro Arg Val Arg Glu Ile His Leu Glu Asn Asn Lys Leu
            290             295             300

Lys Lys Ile Pro Ser Gly Leu Pro Glu Leu Lys Tyr Leu Gln Ile
            305             310             315

Ile Phe Leu His Ser Asn Ser Ile Ala Arg Val Gly Val Asn Asp
            320             325             330

Phe Cys Pro Thr Val Pro Lys Met Lys Lys Ser Leu Tyr Ser Ala
            335             340             345

Ile Ser Leu Phe Asn Asn Pro Val Lys Tyr Trp Glu Met Gln Pro
            350             355             360

Ala Thr Phe Arg Cys Val Leu Ser Arg Met Ser Val Gln Leu Gly
            365             370             375

Asn Phe Gly Met
```

<210> 31
<211> 2372
<212> DNA
<213> Homosapiens

<400> 31

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agcagggaaa tccggatgtc tcggttatga agtggagcag tgagtgtgag 50

cctcaacata gttccagaac tctccatccg gactagttat tgagcatctg 100

cctctcatat caccagtggc catctgaggt gtttccctgg ctctgaaggg 150

gtaggcacga tggccaggtg cttcagcctg gtgttgcttc tcacttccat 200

ctggaccacg aggctcctgg tccaaggctc tttgcgtgca gaagagcttt 250

ccatccaggt gtcatgcaga attatgggga tcacccttgt gagcaaaaag 300

gcgaaccagc agctgaattt cacagaagct aaggaggcct gtaggctgct 350

gggactaagt ttggccggca aggaccaagt tgaaacagcc ttgaaagcta 400

gctttgaaac ttgcagctat ggctgggttg gagatggatt cgtggtcatc 450

tctaggatta gcccaaaccc caagtgtggg aaaaatgggg tgggtgtcct 500

gatttggaag gttccagtga gccgacagtt tgcagcctat tgttacaact 550

catctgatac ttggactaac tcgtgcattc cagaaattat caccaccaaa 600

gatcccatat tcaacactca aactgcaaca caaacaacag aatttattgt 650

cagtgacagt acctactcgg tggcatcccc ttactctaca atacctgccc 700

ctactactac tcctcctgct ccagcttcca cttctattcc acggagaaaa 750

aaattgattt gtgtcacaga agtttttatg gaaactagca ccatgtctac 800

agaaactgaa ccatttgttg aaaataaagc agcattcaag aatgaagctg 850

ctgggtttgg aggtgtcccc acggctctgc tagtgcttgc tctcctcttc 900

tttggtgctg cagctggtct tggattttgc tatgtcaaaa ggtatgtgaa 950

ggccttccct tttacaaaca agaatcagca gaaggaaatg atcgaaacca 1000

aagtagtaaa ggaggagaag gccaatgata gcaaccctaa tgaggaatca 1050

aagaaaactg ataaaaaccc agaagagtcc aagagtccaa gcaaaactac 1100

cgtgcgatgc ctggaagctg aagtttagat gagacagaaa tgaggagaca 1150

cacctgaggc tggtttcttt catgctcctt accctgcccc agctggggaa 1200

atcaaaaggg ccaaagaacc aaagaagaaa gtccaccctt ggttcctaac 1250

tggaatcagc tcaggactgc cattggacta tggagtgcac caaagagaat 1300

gcccttctcc ttattgtaac cctgtctgga tcctatcctc ctacctccaa 1350

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ggagaaagga gttttgcaaa gtgcaaggac ctaaaacatc tcatcagtat 1450

ccagtggtaa aaaggcctcc tggctgtctg aggctaggtg ggttgaaagc 1500

caaggagtca ctgagaccaa ggctttctct actgattccg cagctcagac 1550

cctttcttca gctctgaaag agaaacacgt atcccacctg acatgtcctt 1600
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38

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ctgagcccgg taagagcaaa agaatggcag aaaagtttag cccctgaaag 1650

ccatggagat tctcataact tgagacctaa tctctgtaaa gctaaaataa 1700

agaaatagaa caaggctgag gatacgacag tacactgtca gcagggactg 1750

taaacacaga cagggtcaaa gtgttttctc tgaacacatt gagttggaat 1800

cactgtttag aacacacaca cttacttttt ctggtctcta ccactgctga 1850

tattttctct aggaaatata cttttacaag taacaaaaat aaaaactctt 1900

ataaatttct attttttatct gagttacaga aatgattact aaggaagatt 1950

actcagtaat ttgtttaaaa agtaataaaa ttcaacaaac atttgctgaa 2000

tagctactat atgtcaagtg ctgtgcaagg tattcactc tgtaattgaa 2050

tattattcct caaaaaattg cacatagtag aacgctatct gggaagctat 2100

ttttttcagt tttgatattt ctagcttatc tacttccaaa ctaattttta 2150

tttttgctga gactaatctt attcattttc tctaatatgg caaccattat 2200

aaccttaatt tattattaac atacctaaga agtacattgt tacctctata 2250

taccaaagca cattttaaaa gtgccattaa caaatgtatc actagccctc 2300

cttttttccaa caagaaggga ctgagagatg cagaaatatt tgtgacaaaa 2350

aattaaagca tttagaaaac tt 2372
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<210> 32
<211> 322
<212> PRT
<213> Homosapiens

<400> 32
Met Ala Arg Cys Phe Ser Leu Val Leu Leu Leu Thr Ser Ile Trp
  1               5                  10                  15

Thr Thr Arg Leu Leu Val Gln Gly Ser Leu Arg Ala Glu Glu Leu
             20                  25                  30

Ser Ile Gln Val Ser Cys Arg Ile Met Gly Ile Thr Leu Val Ser
                 35                  40                  45

Lys Lys Ala Asn Gln Gln Leu Asn Phe Thr Glu Ala Lys Glu Ala
                 50                  55                  60

Cys Arg Leu Leu Gly Leu Ser Leu Ala Gly Lys Asp Gln Val Glu
                 65                  70                  75

Thr Ala Leu Lys Ala Ser Phe Glu Thr Cys Ser Tyr Gly Trp Val
                 80                  85                  90

Gly Asp Gly Phe Val Val Ile Ser Arg Ile Ser Pro Asn Pro Lys
                 95                  100                 105

Cys Gly Lys Asn Gly Val Gly Val Leu Ile Trp Lys Val Pro Val
                 110                 115                 120

Ser Arg Gln Phe Ala Ala Tyr Cys Tyr Asn Ser Ser Asp Thr Trp
```

39

Thr Asn Ser Cys Ile Pro Glu Ile Ile Thr Thr Lys Asp Pro Ile
                140                 145                 150


Phe Asn Thr Gln Thr Ala Thr Gln Thr Thr Glu Phe Ile Val Ser
                155                 160                 165

Asp Ser Thr Tyr Ser Val Ala Ser Pro Tyr Ser Thr Ile Pro Ala
                170                 175                 180

Pro Thr Thr Thr Pro Pro Ala Pro Ala Ser Thr Ser Ile Pro Arg
                185                 190                 195

Arg Lys Lys Leu Ile Cys Val Thr Glu Val Phe Met Glu Thr Ser
                200                 205                 210

Thr Met Ser Thr Glu Thr Glu Pro Phe Val Glu Asn Lys Ala Ala
                215                 220                 225

Phe Lys Asn Glu Ala Ala Gly Phe Gly Gly Val Pro Thr Ala Leu
                230                 235                 240

Leu Val Leu Ala Leu Leu Phe Phe Gly Ala Ala Ala Gly Leu Gly
                245                 250                 255

Phe Cys Tyr Val Lys Arg Tyr Val Lys Ala Phe Pro Phe Thr Asn
                260                 265                 270

Lys Asn Gln Gln Lys Glu Met Ile Glu Thr Lys Val Val Lys Glu
                275                 280                 285

Glu Lys Ala Asn Asp Ser Asn Pro Asn Glu Glu Ser Lys Lys Thr
                290                 295                 300

Asp Lys Asn Pro Glu Glu Ser Lys Ser Pro Ser Lys Thr Thr Val
                305                 310                 315

Arg Cys Leu Glu Ala Glu Val
                320

<210> 33
<211> 3367
<212> DNA
<213> Homosapiens

<400> 33
 gaaaaaaaaa aaaagggaag caagcttagc tgtacaccct gagtcttgca 50

 aaagctgcag ccccacccag gagcagggtg gtggctgggg cgatggtgga 100

 cgccctgaag atgtcccatg gctactgaag gggctgccca gttagggaac 150

 agagtggcgg gcatggtgtg tagcctatgg gtgctgctcc tggtgtcttc 200

 agttctggct ctggaagagg tattgctgga caccaccgga gagacatctg 250

 agattggctg gctcacctac ccaccagggg ggtgggacga ggtgagtgtt 300

 ctggacgacc agcgacgcct gactcggacc tttgaggcat gtcatgtggc 350

 aggggccccct ccaggcaccg ggcaggacaa ttggttgcag acacactttg 400

40

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tggagcggcg cgggggcccag agggcgcaca ttcgactcca cttctctgtg 450

cgggcatgct ccagcctggg tgtgagcggc ggcacctgcc gggagacctt 500

caccctttac taccgtcagg ctgaggagcc cgacagccct gacagcgttt 550

cctcctggca cctcaaacgt tggaccaagg tggacacaat tgcagcagac 600

gagagctttc catcctcctc ctcctcctcc tcctcctctt cttcctctgc 650

agcgtgggct gtgggacccc acggggctgg gcagcgggct ggactgcaac 700

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agacgcaggc cagtgggggct gggggggcct ccctggtggc agctgtgggc 900

acctgtgtgg ctcatgcaga gccagaggag gatggagtag ggggccaggc 950

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tagctgtcgg gggctgccgc tgccagcctg gataccaacc agcacgagga 1050

gacaaggcct gccaagcctg cccacggggg ctctataagg cttctgctgg 1100

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cagggatgag gtccacttcg accctcgcca gagaggcctg actgagagcc 1450

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ctgccaccgt gacacagctg agccctggcc acatctatgg tttccaggtg 1800

cgggcccgga ctgctgccgg ccacggcccc tacggggggca aagtctattt 1850

ccagacactt cctcaagggg agctgtcttc ccagcttccg gaaagactct 1900

ccttggtgat cggctccacc ctgggggctt tggccttcct cctgctggca 1950

gccatcaccg tgctggcggt cgtcttccag cggaagcggc gtgggactgg 2000
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ctacacggag cagctgcagc aatacagcag cccaggactc ggggtgaagt 2050

attacatcga cccctccacc tacgaggacc cctgtcaggc catccgagaa 2100

cttgcccggg aagtcgatcc tgcttatatc aagattgagg aggtcattgg 2150

gacaggctct tttggagaag tgcgccaggg ccgcctgcag ccacggggac 2200

ggagggagca gactgtggcc atccaggccc tgtgggccgg gggcgccgaa 2250

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cacatccagc tccttcagca cacctgagg cagcagggct cagtggaggt 3150

ctgagaatga cgatacccgt gactcagccc tggacactgg tccgagaagg 3200

gacatgtggg acgtgagccg ggctccaaca gcctctgtga gagatgcccc 3250

acaccaaacc caaccctccg atggctgcat tccctggtcc tccgcttttc 3300

caccagcccc ctcctcatta aagggaaaga agggaatttg caaaaaaaaa 3350

aaaaaaaaa aaaaaaa 3367
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&lt;210&gt; 34
&lt;211&gt; 856
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 34
Met Ala Thr Glu Gly Ala Ala Gln Leu Gly Asn Arg Val Ala Gly

```
      1                   5                          10                          15
Met Val Cys Ser Leu Trp Val Leu Leu Leu Val Ser Ser Val Leu
                20                  25                          30

Ala Leu Glu Glu Val Leu Leu Asp Thr Thr Gly Glu Thr Ser Glu
                35                  40                          45

Ile Gly Trp Leu Thr Tyr Pro Pro Gly Gly Trp Asp Glu Val Ser
                50                  55                          60

Val Leu Asp Asp Gln Arg Arg Leu Thr Arg Thr Phe Glu Ala Cys
                65                  70                          75

His Val Ala Gly Ala Pro Pro Gly Thr Gly Gln Asp Asn Trp Leu
                80                  85                          90

Gln Thr His Phe Val Glu Arg Arg Gly Ala Gln Arg Ala His Ile
                95                  100                         105

Arg Leu His Phe Ser Val Arg Ala Cys Ser Ser Leu Gly Val Ser
                110                 115                         120

Gly Gly Thr Cys Arg Glu Thr Phe Thr Leu Tyr Tyr Arg Gln Ala
                125                 130                         135

Glu Glu Pro Asp Ser Pro Asp Ser Val Ser Ser Trp His Leu Lys
                140                 145                         150

Arg Trp Thr Lys Val Asp Thr Ile Ala Ala Asp Glu Ser Phe Pro
                155                 160                         165

Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ala Ala Trp
                170                 175                         180

Ala Val Gly Pro His Gly Ala Gly Gln Arg Ala Gly Leu Gln Leu
                185                 190                         195

Asn Val Lys Glu Arg Ser Phe Gly Pro Leu Thr Gln Arg Gly Phe
                200                 205                         210

Tyr Val Ala Phe Gln Asp Thr Gly Ala Cys Leu Ala Leu Val Ala
                215                 220                         225

Val Arg Leu Phe Ser Tyr Thr Cys Pro Ala Val Leu Arg Ser Phe
                230                 235                         240

Ala Ser Phe Pro Glu Thr Gln Ala Ser Gly Ala Gly Gly Ala Ser
                245                 250                         255

Leu Val Ala Ala Val Gly Thr Cys Val Ala His Ala Glu Pro Glu
                260                 265                         270

Glu Asp Gly Val Gly Gly Gln Ala Gly Gly Ser Pro Pro Arg Leu
                275                 280                         285

His Cys Asn Gly Glu Gly Lys Trp Met Val Ala Val Gly Gly Cys
                290                 295                         300

Arg Cys Gln Pro Gly Tyr Gln Pro Ala Arg Gly Asp Lys Ala Cys
                305                 310                         315
```

43

```
Gln Ala Cys Pro Arg Gly Leu Tyr Lys Ala Ser Ala Gly Asn Ala
            320               325               330

Pro Cys Ser Pro Cys Pro Ala Arg Ser His Ala Pro Asn Pro Ala
            335               340               345

Ala Pro Val Cys Pro Cys Leu Glu Gly Phe Tyr Arg Ala Ser Ser
            350               355               360

Asp Pro Pro Glu Ala Pro Cys Thr Gly Pro Pro Ser Ala Pro Gln
            365               370               375

Glu Leu Trp Phe Glu Val Gln Gly Ser Ala Leu Met Leu His Trp
            380               385               390

Arg Leu Pro Arg Glu Leu Gly Gly Arg Gly Asp Leu Leu Phe Asn
            395               400               405

Val Val Cys Lys Glu Cys Glu Gly Arg Gln Glu Pro Ala Ser Gly
            410               415               420

Gly Gly Gly Thr Cys His Arg Cys Arg Asp Glu Val His Phe Asp
            425               430               435

Pro Arg Gln Arg Gly Leu Thr Glu Ser Arg Val Leu Val Gly Gly
            440               445               450

Leu Arg Ala His Val Pro Tyr Ile Leu Glu Val Gln Ala Val Asn
            455               460               465

Gly Val Ser Glu Leu Ser Pro Asp Pro Pro Gln Ala Ala Ala Ile
            470               475               480

Asn Val Ser Thr Ser His Glu Val Pro Ser Ala Val Pro Val Val
            485               490               495

His Gln Val Ser Arg Ala Ser Asn Ser Ile Thr Val Ser Trp Pro
            500               505               510

Gln Pro Asp Gln Thr Asn Gly Asn Ile Leu Asp Tyr Gln Leu Arg
            515               520               525

Tyr Tyr Asp Gln Ala Glu Asp Glu Ser His Ser Phe Thr Leu Thr
            530               535               540

Ser Glu Thr Asn Thr Ala Thr Val Thr Gln Leu Ser Pro Gly His
            545               550               555

Ile Tyr Gly Phe Gln Val Arg Ala Arg Thr Ala Ala Gly His Gly
            560               565               570

Pro Tyr Gly Gly Lys Val Tyr Phe Gln Thr Leu Pro Gln Gly Glu
            575               580               585

Leu Ser Ser Gln Leu Pro Glu Arg Leu Ser Leu Val Ile Gly Ser
            590               595               600

Thr Leu Gly Ala Leu Ala Phe Leu Leu Leu Ala Ala Ile Thr Val
            605               610               615

Leu Ala Val Val Phe Gln Arg Lys Arg Arg Gly Thr Gly Tyr Thr
            620               625               630
```

44

```
Glu Gln Leu Gln Gln Tyr Ser Ser Pro Gly Leu Gly Val Lys Tyr
                635             640             645

Tyr Ile Asp Pro Ser Thr Tyr Glu Asp Pro Cys Gln Ala Ile Arg
                650             655             660

Glu Leu Ala Arg Glu Val Asp Pro Ala Tyr Ile Lys Ile Glu Glu
                665             670             675

Val Ile Gly Thr Gly Ser Phe Gly Glu Val Arg Gln Gly Arg Leu
                680             685             690

Gln Pro Arg Gly Arg Arg Glu Gln Thr Val Ala Ile Gln Ala Leu
                695             700             705

Trp Ala Gly Gly Ala Glu Ser Leu Gln Met Thr Phe Leu Gly Arg
                710             715             720

Ala Ala Val Leu Gly Gln Phe Gln His Pro Asn Ile Leu Arg Leu
                725             730             735

Glu Gly Val Val Thr Lys Ser Arg Pro Leu Met Val Leu Thr Glu
                740             745             750

Phe Met Glu Leu Gly Pro Leu Asp Ser Phe Leu Arg Gln Arg Glu
                755             760             765

Gly Gln Phe Ser Ser Leu Gln Leu Val Ala Met Gln Arg Gly Val
                770             775             780

Ala Ala Ala Met Gln Tyr Leu Ser Ser Phe Ala Phe Val His Arg
                785             790             795

Ser Leu Ser Ala His Ser Val Leu Val Asn Ser His Leu Val Cys
                800             805             810

Lys Val Ala Arg Leu Gly His Ser Pro Gln Gly Pro Ser Cys Leu
                815             820             825

Leu Arg Trp Ala Ala Pro Glu Val Ile Ala His Gly Lys His Thr
                830             835             840

His Val Gly Ser Asp Glu Leu Trp Arg Thr Ala Leu Leu Gly His
                845             850             855

Glu
```

```
<210> 35
<211> 1514
<212> DNA
<213> Homosapiens

<400> 35
ggggtctccc tcagggccgg gaggcacagc ggtccctgct tgctgaaggg 50

ctggatgtac gcatccgcag gttcccgcgg acttgggggc gcccgctgag 100

ccccggcgcc cgcagaagac ttgtgtttgc ctcctgcagc ctcaacccgg 150

agggcagcga gggcctacca ccatgatcac tggtgtgttc agcatgcgct 200

tgtggacccc agtgggcgtc ctgacctcgc tggcgtactg cctgcaccag 250
```

```
cggcgggtgg ccctggccga gctgcaggag gccgatggcc agtgtccggt 300

cgaccgcagc ctgctgaagt tgaaaatggt gcaggtcgtg tttcgacacg 350

gggctcggag tcctctcaag ccgctcccgc tggaggagca ggtagagtgg 400

aacccccagc tattagaggt cccaccccaa actcagtttg attacacagt 450

caccaatcta gctggtggtc cgaaaccata ttctccttac gactctcaat 500

accatgagac caccctgaag gggggcatgt ttgctgggca gctgaccaag 550

gtgggcatgc agcaaatgtt tgccttggga gagagactga ggaagaacta 600

tgtggaagac attccctttc tttcaccaac cttcaaccca caggaggtct 650

ttattcgttc cactaacatt tttcggaatc tggagtccac ccgttgtttg 700

ctggctgggc ttttccagtg tcagaaagaa ggacccatca tcatccacac 750

tgatgaagca gattcagaag tcttgtatcc caactaccaa agctgctgga 800

gcctgaggca gagaaccaga ggccggaggc agactgcctc tttacagcca 850

ggaatctcag aggatttgaa aaaggtgaag acaggatgg gcattgacag 900

tagtgataaa gtggacttct tcatcctcct ggacaacgtg gctgccgagc 950

aggcacacaa cctcccaagc tgccccatgc tgaagagatt tgcacggatg 1000

atcgaacaga gagctgtgga cacatccttg tacatactgc ccaaggaaga 1050

cagggaaagt cttcagatgg cagtaggccc attcctccac atcctagaga 1100

gcaacctgct gaaagccatg gactctgcca ctgcccccga caagatcaga 1150

aagctgtatc tctatgcggc tcatgatgtg accttcatac cgctcttaat 1200

gaccctgggg attttttgacc acaaatggcc accgtttgct gttgacctga 1250

ccatggaact ttaccagcac ctggaatcta aggagtggtt tgtgcagctc 1300

tattaccacg ggaaggagca ggtgccgaga ggttgccctg atgggctctg 1350

cccgctggac atgttcttga atgccatgtc agtttatacc ttaagcccag 1400

aaaaatacca tgcactctgc tctcaaactc aggtgatgga agttggaaat 1450

gaagagtaac tgatttataa aagcaggatg tgttgatttt aaaataaagt 1500

gcctttatac aatg 1514
```

```
<210> 36
<211> 428
<212> PRT
<213> Homosapiens


<400> 36
  Met Ile Thr Gly Val Phe Ser Met Arg Leu Trp Thr Pro Val Gly
  1               5                   10                  15
```

```
Val Leu Thr Ser Leu Ala Tyr Cys Leu His Gln Arg Arg Val Ala
            20              25                      30

Leu Ala Glu Leu Gln Glu Ala Asp Gly Gln Cys Pro Val Asp Arg
            35              40                      45

Ser Leu Leu Lys Leu Lys Met Val Gln Val Val Phe Arg His Gly
            50              55                      60

Ala Arg Ser Pro Leu Lys Pro Leu Pro Leu Glu Glu Gln Val Glu
            65              70                      75

Trp Asn Pro Gln Leu Leu Glu Val Pro Pro Gln Thr Gln Phe Asp
            80              85                      90

Tyr Thr Val Thr Asn Leu Ala Gly Gly Pro Lys Pro Tyr Ser Pro
            95             100                     105

Tyr Asp Ser Gln Tyr His Glu Thr Thr Leu Lys Gly Gly Met Phe
           110             115                     120

Ala Gly Gln Leu Thr Lys Val Gly Met Gln Gln Met Phe Ala Leu
           125             130                     135

Gly Glu Arg Leu Arg Lys Asn Tyr Val Glu Asp Ile Pro Phe Leu
           140             145                     150

Ser Pro Thr Phe Asn Pro Gln Glu Val Phe Ile Arg Ser Thr Asn
           155             160                     165

Ile Phe Arg Asn Leu Glu Ser Thr Arg Cys Leu Leu Ala Gly Leu
           170             175                     180

Phe Gln Cys Gln Lys Glu Gly Pro Ile Ile Ile His Thr Asp Glu
           185             190                     195

Ala Asp Ser Glu Val Leu Tyr Pro Asn Tyr Gln Ser Cys Trp Ser
           200             205                     210

Leu Arg Gln Arg Thr Arg Gly Arg Arg Gln Thr Ala Ser Leu Gln
           215             220                     225

Pro Gly Ile Ser Glu Asp Leu Lys Lys Val Lys Asp Arg Met Gly
           230             235                     240

Ile Asp Ser Ser Asp Lys Val Asp Phe Phe Ile Leu Leu Asp Asn
           245             250                     255

Val Ala Ala Glu Gln Ala His Asn Leu Pro Ser Cys Pro Met Leu
           260             265                     270

Lys Arg Phe Ala Arg Met Ile Glu Gln Arg Ala Val Asp Thr Ser
           275             280                     285

Leu Tyr Ile Leu Pro Lys Glu Asp Arg Glu Ser Leu Gln Met Ala
           290             295                     300

Val Gly Pro Phe Leu His Ile Leu Glu Ser Asn Leu Leu Lys Ala
           305             310                     315

Met Asp Ser Ala Thr Ala Pro Asp Lys Ile Arg Lys Leu Tyr Leu
           320             325                     330
```

47

```
Tyr Ala Ala His Asp Val Thr Phe Ile Pro Leu Leu Met Thr Leu
            335             340                 345

Gly Ile Phe Asp His Lys Trp Pro Pro Phe Ala Val Asp Leu Thr
            350             355                 360

Met Glu Leu Tyr Gln His Leu Glu Ser Lys Glu Trp Phe Val Gln
            365             370                 375

Leu Tyr Tyr His Gly Lys Glu Gln Val Pro Arg Gly Cys Pro Asp
            380             385                 390

Gly Leu Cys Pro Leu Asp Met Phe Leu Asn Ala Met Ser Val Tyr
            395             400                 405

Thr Leu Ser Pro Glu Lys Tyr His Ala Leu Cys Ser Gln Thr Gln
            410             415                 420

Val Met Glu Val Gly Asn Glu Glu
            425
```

<210> 37
<211> 1427
<212> DNA
<213> Homosapiens

<400> 37

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actgcactcg gttctatcga ttgaattccc cggggatcct ctagagatcc 50

ctcgacctcg acccacgcgt ccgcggacgc gtgggcggac gcgtgggccg 100

gctaccagga agagtctgcc gaaggtgaag gccatggact tcatcacctc 150

cacagccatc ctgcccctgc tgttcggctg cctgggcgtc ttcggcctct 200

tccggctgct gcagtgggtg cgcgggaagg cctacctgcg gaatgctgtg 250

gtggtgatca caggcgccac ctcagggctg ggcaaagaat gtgcaaaagt 300

cttctatgct gcgggtgcta aactggtgct ctgtggccgg aatggtgggg 350

ccctagaaga gctcatcaga gaacttaccg cttctcatgc caccaaggtg 400

cagacacaca agccttactt ggtgaccttc gacctcacag actctggggc 450

catagttgca gcagcagctg agatcctgca gtgctttggc tatgtcgaca 500

tacttgtcaa caatgctggg atcagctacc gtggtaccat catggacacc 550

acagtggatg tggacaagag ggtcatggag acaaactact ttggcccagt 600

tgctctaacg aaagcactcc tgccctccat gatcaagagg aggcaaggcc 650

acattgtcgc catcagcagc atccagggca agatgagcat ccttttcga 700

tcagcatatg cagcctccaa gcacgcaacc caggctttct ttgactgtct 750

gcgtgccgag atggaacagt atgaaattga ggtgaccgtc atcagccccg 800

gctacatcca caccaacctc tctgtaaatg ccatcaccgc ggatggatct 850

aggtatggag ttatggacac caccacagcc cagggccgaa gccctgtgga 900
```

48

```
ggtggcccag gatgttcttg ctgctgtggg gaagaagaag aaagatgtga 950

tcctggctga cttactgcct tccttggctg tttatcttcg aactctggct 1000

cctgggctct tcttcagcct catggcctcc agggccagaa aagagcggaa 1050

atccaagaac tcctagtact ctgaccagcc agggccaggg cagagaagca 1100

gcactcttag gcttgcttac tctacaaggg acagttgcat ttgttgagac 1150

tttaatggag atttgtctca caagtgggaa agactgaaga aacacatctc 1200

gtgcagatct gctggcagag gacaatcaaa aacgacaaca agcttcttcc 1250

cagggtgagg ggaaacactt aaggaataaa tatggagctg gggtttaaca 1300

ctaaaaacta gaaataaaca tctcaaacag taaaaaaaaa aaaaaagggc 1350

ggccgcgact ctagagtcga cctgcagaag cttggccgcc atggcccaac 1400

ttgtttattg cagcttataa tggttac 1427
```

```
<210> 38
<211> 310
<212> PRT
<213> Homosapiens

<400> 38
Met Asp Phe Ile Thr Ser Thr Ala Ile Leu Pro Leu Leu Phe Gly
 1               5                  10                  15

Cys Leu Gly Val Phe Gly Leu Phe Arg Leu Leu Gln Trp Val Arg
                20                  25                  30

Gly Lys Ala Tyr Leu Arg Asn Ala Val Val Val Ile Thr Gly Ala
                35                  40                  45

Thr Ser Gly Leu Gly Lys Glu Cys Ala Lys Val Phe Tyr Ala Ala
                50                  55                  60

Gly Ala Lys Leu Val Leu Cys Gly Arg Asn Gly Gly Ala Leu Glu
                65                  70                  75

Glu Leu Ile Arg Glu Leu Thr Ala Ser His Ala Thr Lys Val Gln
                80                  85                  90

Thr His Lys Pro Tyr Leu Val Thr Phe Asp Leu Thr Asp Ser Gly
                95                  100                 105

Ala Ile Val Ala Ala Ala Ala Glu Ile Leu Gln Cys Phe Gly Tyr
                110                 115                 120

Val Asp Ile Leu Val Asn Asn Ala Gly Ile Ser Tyr Arg Gly Thr
                125                 130                 135

Ile Met Asp Thr Thr Val Asp Val Asp Lys Arg Val Met Glu Thr
                140                 145                 150

Asn Tyr Phe Gly Pro Val Ala Leu Thr Lys Ala Leu Leu Pro Ser
                155                 160                 165

Met Ile Lys Arg Arg Gln Gly His Ile Val Ala Ile Ser Ser Ile
                170                 175                 180
```

49

```
Gln Gly Lys Met Ser Ile Pro Phe Arg Ser Ala Tyr Ala Ala Ser
                185                 190                 195

Lys His Ala Thr Gln Ala Phe Phe Asp Cys Leu Arg Ala Glu Met
                200                 205                 210

Glu Gln Tyr Glu Ile Glu Val Thr Val Ile Ser Pro Gly Tyr Ile
                215                 220                 225

His Thr Asn Leu Ser Val Asn Ala Ile Thr Ala Asp Gly Ser Arg
                230                 235                 240

Tyr Gly Val Met Asp Thr Thr Thr Ala Gln Gly Arg Ser Pro Val
                245                 250                 255

Glu Val Ala Gln Asp Val Leu Ala Ala Val Gly Lys Lys Lys Lys
                260                 265                 270

Asp Val Ile Leu Ala Asp Leu Leu Pro Ser Leu Ala Val Tyr Leu
                275                 280                 285

Arg Thr Leu Ala Pro Gly Leu Phe Phe Ser Leu Met Ala Ser Arg
                290                 295                 300

Ala Arg Lys Glu Arg Lys Ser Lys Asn Ser
                305                 310
```

```
<210> 39
<211> 3401
<212> DNA
<213> Homosapiens

<400> 39
 gcaagccaag gcgctgtttg agaaggtgaa gaagttccgg acccatgtgg 50

 aggagggggga cattgtgtac cgcctctaca tgcggcagac catcatcaag 100

 gtgatcaagt tcatcctcat catctgctac accgtctact acgtgcacaa 150

 catcaagttc gacgtggact gcaccgtgga cattgagagc ctgacgggct 200

 accgcaccta ccgctgtgcc caccccctgg ccacactctt caagatcctg 250

 gcgtccttct acatcagcct agtcatcttc tacggcctca tctgcatgta 300

 cacactgtgg tggatgctac ggcgctccct caagaagtac tcgtttgagt 350

 cgatccgtga ggagagcagc tacagcgaca tccccgacgt caagaacgac 400

 ttcgccttca tgctgcacct cattgaccaa tacgacccgc tctactccaa 450

 gcgcttcgcc gtcttcctgt cggaggtgag tgagaacaag ctgcggcagc 500

 tgaacctcaa caacgagtgg acgctggaca agctccggca gcggctcacc 550

 aagaacgcgc aggacaagct ggagctgcac ctgttcatgc tcagtggcat 600

 ccctgacact gtgtttgacc tggtggagct ggaggtcctc aagctggagc 650

 tgatccccga cgtgaccatc ccgcccagca ttgcccagct cacgggcctc 700

 aaggagctgt ggctctacca cacagcggcc aagattgaag cgcctgcgct 750
```

```
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tcaaggagat cccgctgtgg atctatagcc tgaagacact ggaggagctg 850

cacctgacgg gcaacctgag cgcggagaac aaccgctaca tcgtcatcga 900

cgggctgcgg gagctcaaac gcctcaaggt gctgcggctc aagagcaacc 950

taagcaagct gccacaggtg gtcacagatg tgggcgtgca cctgcagaag 1000

ctgtccatca caatgagggg caccaagctc atcgtcctca acagcctcaa 1050

gaagatggcg aacctgactg agctggagct gatccgctgc gacctggagc 1100

gcatccccca ctccatcttc agcctccaca acctgcagga gattgacctc 1150

aaggacaaca acctcaagac catcgaggag atcatcagct ccagcacct 1200

gcaccgcctc acctgcctta agctgtggta caaccacatc gcctacatcc 1250

ccatccagat cggcaacctc accaacctgg agcgcctcta cctgaaccgc 1300

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ctacctggac ctcagccaca caacctgac cttcctccct gccgacatcg 1400

gcctcctgca gaacctccag aacctagcca tcacggccaa ccggatcgag 1450

acgctccctc cggagctctt ccagtgccgg aagctgcggg ccctgcacct 1500

gggcaacaac gtgctgcagt cactgccctc cagggtgggc gagctgacca 1550

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gagctgggcg agtgcccact gctcaagcgc agcggcttgg tggtggagga 1650

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ctgacaagga gcaggcctga gcgaggccgg cccagcacag caagcagcag 1750

gaccgctgcc cagtcctcag gcccggaggg gcaggcctag cttctcccag 1800

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gcttgtgagt caggccagag cgagaggaca gtatctgtgg ggctggcccc 1900

ttttctccct ctgagactca cgtcccccag ggcaagtgct tgtggaggag 1950

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ggccagctct gccccagggg ctgagctgcc accagaggtc ctgggaccct 2050

cactttagtt cttggtattt attttttctcc atctcccacc tccttcatcc 2100

agataactta tacattccca agaaagttca gcccagatgg aaggtgttca 2150

gggaaaggtg ggctgccttt tccccttgtc cttatttagc gatgccgccg 2200

ggcatttaac acccacctgg acttcagcag agtggtccgg ggcgaaccag 2250

ccatgggacg gtcacccagc agtgccgggc tgggctctgc ggtgcggtcc 2300

acgggagagc aggcctccag ctggaaaggc caggcctgga gcttgcctct 2350
```

51

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tcagtttttg  tggcagtttt  agttttttgt  tttttttttt  tttaatcaaa  2400

aaacaatttt  ttttaaaaaa  aagctttgaa  aatggatggt  ttgggtatta  2450

aaaagaaaaa  aaaaacttaa  aaaaaaaaag  acactaacgg  ccagtgagtt  2500

ggagtctcag  ggcagggtgg  cagtttccct  tgagcaaagc  agccagacgt  2550

tgaactgtgt  ttcctttccc  tgggcgcagg  gtgcagggtg  tcttccggat  2600

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atgtgtcttg  gcaggcactc  atttctgtgg  ctgtcggcca  gagggaatgt  2750

tctggagctg  ccaaggaggg  aggagactcg  ggttggctaa  tccccggatg  2800

aacggtgctc  cattcgcacc  tcccctcctc  gtgcctgccc  tgcctctcca  2850

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ccaagccggt  tcccgtccct  ggcgcctgga  gtgcacacag  cccagtcggc  3100

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gagtctcttg  tcttaatgat  tatgtccatc  cgtctgtccg  tccatttgtg  3250

ttttctgcgt  cgtgtcattg  gatataatcc  tcagaaataa  tgcacactag  3300

cctctgacaa  ccatgaagca  aaaatccgtt  acatgtgggt  ctgaacttgt  3350

agactcggtc  acagtatcaa  ataaaatcta  taacagaaaa  aaaaaaaaaa  3400

a 3401
```

<210> 40
<211> 546
<212> PRT
<213> Homosapiens

<400> 40
```
Met Arg Gln Thr Ile Ile Lys Val Ile Lys Phe Ile Leu Ile Ile
 1               5                  10                  15

Cys Tyr Thr Val Tyr Tyr Val His Asn Ile Lys Phe Asp Val Asp
                20                  25                  30

Cys Thr Val Asp Ile Glu Ser Leu Thr Gly Tyr Arg Thr Tyr Arg
                35                  40                  45

Cys Ala His Pro Leu Ala Thr Leu Phe Lys Ile Leu Ala Ser Phe
                50                  55                  60

Tyr Ile Ser Leu Val Ile Phe Tyr Gly Leu Ile Cys Met Tyr Thr
```

```
                    65                    70                    75
Leu Trp Trp Met Leu Arg Arg Ser Leu Lys Lys Tyr Ser Phe Glu
                80                    85                    90
Ser Ile Arg Glu Glu Ser Ser Tyr Ser Asp Ile Pro Asp Val Lys
                95                   100                   105
Asn Asp Phe Ala Phe Met Leu His Leu Ile Asp Gln Tyr Asp Pro
               110                   115                   120
Leu Tyr Ser Lys Arg Phe Ala Val Phe Leu Ser Glu Val Ser Glu
               125                   130                   135
Asn Lys Leu Arg Gln Leu Asn Leu Asn Asn Glu Trp Thr Leu Asp
               140                   145                   150
Lys Leu Arg Gln Arg Leu Thr Lys Asn Ala Gln Asp Lys Leu Glu
               155                   160                   165
Leu His Leu Phe Met Leu Ser Gly Ile Pro Asp Thr Val Phe Asp
               170                   175                   180
Leu Val Glu Leu Glu Val Leu Lys Leu Glu Leu Ile Pro Asp Val
               185                   190                   195
Thr Ile Pro Pro Ser Ile Ala Gln Leu Thr Gly Leu Lys Glu Leu
               200                   205                   210
Trp Leu Tyr His Thr Ala Ala Lys Ile Glu Ala Pro Ala Leu Ala
               215                   220                   225
Phe Leu Arg Glu Asn Leu Arg Ala Leu His Ile Lys Phe Thr Asp
               230                   235                   240
Ile Lys Glu Ile Pro Leu Trp Ile Tyr Ser Leu Lys Thr Leu Glu
               245                   250                   255
Glu Leu His Leu Thr Gly Asn Leu Ser Ala Glu Asn Asn Arg Tyr
               260                   265                   270
Ile Val Ile Asp Gly Leu Arg Glu Leu Lys Arg Leu Lys Val Leu
               275                   280                   285
Arg Leu Lys Ser Asn Leu Ser Lys Leu Pro Gln Val Val Thr Asp
               290                   295                   300
Val Gly Val His Leu Gln Lys Leu Ser Ile Asn Asn Glu Gly Thr
               305                   310                   315
Lys Leu Ile Val Leu Asn Ser Leu Lys Lys Met Ala Asn Leu Thr
               320                   325                   330
Glu Leu Glu Leu Ile Arg Cys Asp Leu Glu Arg Ile Pro His Ser
               335                   340                   345
Ile Phe Ser Leu His Asn Leu Gln Glu Ile Asp Leu Lys Asp Asn
               350                   355                   360
Asn Leu Lys Thr Ile Glu Glu Ile Ile Ser Phe Gln His Leu His
               365                   370                   375
Arg Leu Thr Cys Leu Lys Leu Trp Tyr Asn His Ile Ala Tyr Ile
```

53

```
                  380                     385                     390
      Pro Ile Gln Ile Gly Asn Leu Thr Asn Leu Glu Arg Leu Tyr Leu
                      395         ,               400                 405

      Asn Arg Asn Lys Ile Glu Lys Ile Pro Thr Gln Leu Phe Tyr Cys
                      410                         415                 420

      Arg Lys Leu Arg Tyr Leu Asp Leu Ser His Asn Asn Leu Thr Phe
                      425                         430                 435

      Leu Pro Ala Asp Ile Gly Leu Leu Gln Asn Leu Gln Asn Leu Ala
                      440                         445                 450

      Ile Thr Ala Asn Arg Ile Glu Thr Leu Pro Pro Glu Leu Phe Gln
                      455                         460                 465

      Cys Arg Lys Leu Arg Ala Leu His Leu Gly Asn Asn Val Leu Gln
                      470                         475                 480

      Ser Leu Pro Ser Arg Val Gly Glu Leu Thr Asn Leu Thr Gln Ile
                      485                         490                 495

      Glu Leu Arg Gly Asn Arg Leu Glu Cys Leu Pro Val Glu Leu Gly
                      500                         505                 510

      Glu Cys Pro Leu Leu Lys Arg Ser Gly Leu Val Val Glu Glu Asp
                      515                         520                 525

      Leu Phe Asn Thr Leu Pro Pro Glu Val Lys Glu Arg Leu Trp Arg
                      530                         535                 540

      Ala Asp Lys Glu Gln Ala
                      545
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<400> 41
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 gcgacccgag ccgcgcagga agctgggacc ggaacctcgg cggacccggc 100

 cccacccaac tcacctgcgc aggtcaccag caccctcgga acccagaggc 150

 ccgcgctctg aaggtgaccc ccctggggag gaaggcgatg gcccctgcga 200

 ggacgatggc ccgcgcccgc ctcgccccgg ccggcatccc tgccgtcgcc 250

 ttgtggcttc tgtgcacgct cggcctccag ggcacccagg ccgggccacc 300

 gcccgcgccc cctgggctgc ccgcgggagc cgactgcctg aacagcttta 350

 ccgccggggt gcctggcttc gtgctggaca ccaacgcctc ggtcagcaac 400

 ggagctacct tcctggagtc ccccaccgtg cgccggggct gggactgcgt 450

 gcgcgcctgc tgcaccaccc agaactgcaa cttggcgcta gtggagctgc 500

 agcccgaccg cggggaggac gccatcgccg cctgcttcct catcaactgc 550
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ctctacgagc agaacttcgt gtgcaagttc gcgcccaggg agggcttcat 600

caactacctc acgagggaag tgtaccgctc ctaccgccag ctgcggaccc 650

agggctttgg agggtctggg atccccaagg cctgggcagg catagacttg 700

aagtacaac cccaggaacc cctggtgctg aaggatgtgg aaaacacaga 750

ttggcgccta ctgcggggtg acacggatgt cagggtagag aggaaagacc 800

caaaccaggt ggaactgtgg ggactcaagg aaggcaccta cctgttccag 850

ctgacagtga ctagctcaga ccacccagag gacacggcca acgtcacagt 900

cactgtgctg tccaccaagc agacagaaga ctactgcctc gcatccaaca 950

aggtgggtcg ctgccggggc tctttcccac gctggtacta tgaccccacg 1000

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ggtggttgtt atggcaacaa gaacaacttt gaggaagagc agcagtgcct 1500

cgagtcttgt cgcggcatct ccaagaagga tgtgtttggc ctgaggcggg 1550

aaatccccat tcccagcaca ggctctgtgg agatggctgt cacagtgttc 1600

ctggtcatct gcattgtggt ggtggtagcc atcttgggtt actgcttctt 1650

caagaaccag agaaaggact tccacggaca ccaccaccac ccaccaccca 1700

cccctgccag ctccactgtc tccactaccg aggacacgga gcacctggtc 1750

tataaccaca ccacccggcc cctctgagcc tgggtctcac cggctctcac 1800

ctggccctgc ttcctgcttg ccaaggcaga ggcctgggct gggaaaaact 1850

ttggaaccag actcttgcct gtttcccagg cccactgtgc ctcagagacc 1900

agggctccag cccctcttgg agaagtctca gctaagctca cgtcctgaga 1950

aagctcaaag gtttggaagg agcagaaaac ccttgggcca gaagtaccag 2000

actagatgga cctgcctgca taggagtttg gaggaagttg gagttttgtt 2050

tcctctgttc aaagctgcct gtccctaccc catggtgcta ggaagaggag 2100

tggggtggtg tcagaccctg gaggccccaa ccctgtcctc ccgagctcct 2150
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55

cttccatgct gtgcgcccag ggctgggagg aaggacttcc ctgtgtagtt 2200

tgtgctgtaa agagttgctt tttgtttatt taatgctgtg gcatgggtga 2250

agaggagggg aagaggcctg tttggcctct ctgtcctctc ttcctcttcc 2300

cccaagattg agctctctgc ccttgatcag ccccaccctg gcctagacca 2350

gcagacagag ccaggagagg ctcagctgca ttccgcagcc cccaccccca 2400

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ttgtggaaaa aaaaaaaaaa aaaaaaaaaa aa 2482

<210> 42
<211> 529
<212> PRT
<213> Homosapiens

<400> 42
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  1               5                  10                  15

Gly Ile Pro Ala Val Ala Leu Trp Leu Leu Cys Thr Leu Gly Leu
                 20                  25                  30

Gln Gly Thr Gln Ala Gly Pro Pro Pro Ala Pro Pro Gly Leu Pro
                 35                  40                  45

Ala Gly Ala Asp Cys Leu Asn Ser Phe Thr Ala Gly Val Pro Gly
                 50                  55                  60

Phe Val Leu Asp Thr Asn Ala Ser Val Ser Asn Gly Ala Thr Phe
                 65                  70                  75

Leu Glu Ser Pro Thr Val Arg Arg Gly Trp Asp Cys Val Arg Ala
                 80                  85                  90

Cys Cys Thr Thr Gln Asn Cys Asn Leu Ala Leu Val Glu Leu Gln
                 95                 100                 105

Pro Asp Arg Gly Glu Asp Ala Ile Ala Ala Cys Phe Leu Ile Asn
                110                 115                 120

Cys Leu Tyr Glu Gln Asn Phe Val Cys Lys Phe Ala Pro Arg Glu
                125                 130                 135

Gly Phe Ile Asn Tyr Leu Thr Arg Glu Val Tyr Arg Ser Tyr Arg
                140                 145                 150

Gln Leu Arg Thr Gln Gly Phe Gly Gly Ser Gly Ile Pro Lys Ala
                155                 160                 165

Trp Ala Gly Ile Asp Leu Lys Val Gln Pro Gln Glu Pro Leu Val
                170                 175                 180

Leu Lys Asp Val Glu Asn Thr Asp Trp Arg Leu Leu Arg Gly Asp
                185                 190                 195

Thr Asp Val Arg Val Glu Arg Lys Asp Pro Asn Gln Val Glu Leu
                200                 205                 210

Trp Gly Leu Lys Glu Gly Thr Tyr Leu Phe Gln Leu Thr Val Thr
```

56

Ser Ser Asp His Pro Glu Asp Thr Ala Asn Val Thr Val Thr Val
                230                     235                     240

Leu Ser Thr Lys Gln Thr Glu Asp Tyr Cys Leu Ala Ser Asn Lys
                245                     250                     255

Val Gly Arg Cys Arg Gly Ser Phe Pro Arg Trp Tyr Tyr Asp Pro
                260                     265                     270

Thr Glu Gln Ile Cys Lys Ser Phe Val Tyr Gly Gly Cys Leu Gly
                275                     280                     285

Asn Lys Asn Asn Tyr Leu Arg Glu Glu Glu Cys Ile Leu Ala Cys
                290                     295                     300

Arg Gly Val Gln Gly Gly Pro Leu Arg Gly Ser Ser Gly Ala Gln
                305                     310                     315

Ala Thr Phe Pro Gln Gly Pro Ser Met Glu Arg Arg His Pro Val
                320                     325                     330

Cys Ser Gly Thr Cys Gln Pro Thr Gln Phe Arg Cys Ser Asn Gly
                335                     340                     345

Cys Cys Ile Asp Ser Phe Leu Glu Cys Asp Asp Thr Pro Asn Cys
                350                     355                     360

Pro Asp Ala Ser Asp Glu Ala Ala Cys Glu Lys Tyr Thr Ser Gly
                365                     370                     375

Phe Asp Glu Leu Gln Arg Ile His Phe Pro Ser Asp Lys Gly His
                380                     385                     390

Cys Val Asp Leu Pro Asp Thr Gly Leu Cys Lys Glu Ser Ile Pro
                395                     400                     405

Arg Trp Tyr Tyr Asn Pro Phe Ser Glu His Cys Ala Arg Phe Thr
                410                     415                     420

Tyr Gly Gly Cys Tyr Gly Asn Lys Asn Asn Phe Glu Glu Glu Gln
                425                     430                     435

Gln Cys Leu Glu Ser Cys Arg Gly Ile Ser Lys Lys Asp Val Phe
                440                     445                     450

Gly Leu Arg Arg Glu Ile Pro Ile Pro Ser Thr Gly Ser Val Glu
                455                     460                     465

Met Ala Val Thr Val Phe Leu Val Ile Cys Ile Val Val Val Val
                470                     475                     480

Ala Ile Leu Gly Tyr Cys Phe Phe Lys Asn Gln Arg Lys Asp Phe
                485                     490                     495

His Gly His His His His Pro Pro Pro Thr Pro Ala Ser Ser Thr
                500                     505                     510

Val Ser Thr Thr Glu Asp Thr Glu His Leu Val Tyr Asn His Thr
                515                     520                     525

Thr Arg Pro Leu

<210> 43
<211> 1685
<212> DNA
<213> Homosapiens

<400> 43
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attcaggctc gccagcgccc agccagggag ccggccggga agcgcgatgg 150

gggccccagc cgcctcgctc ctgctcctgc tcctgctgtt cgcctgctgc 200

tgggcgcccg gcggggccaa cctctcccag gacgacagcc agccctggac 250

atctgatgaa acagtggtgg ctggtggcac cgtggtgctc aagtgccaag 300

tgaaagatca cgaggactca tccctgcaat ggtctaaccc tgctcagcag 350

actctctact ttggggagaa gagagccctt cgagataatc gaattcagct 400

ggttacctct acgccccacg agctcagcat cagcatcagc aatgtggccc 450

tggcagacga gggcgagtac acctgctcaa tcttcactat gcctgtgcga 500

actgccaagt ccctcgtcac tgtgctagga attccacaga agcccatcat 550

cactggttat aaatcttcat tacgggaaaa agacacagcc accctaaact 600

gtcagtcttc tgggagcaag cctgcagccc ggctcacctg gagaaagggt 650

gaccaagaac tccacggaga accaacccgc atacaggaag atcccaatgg 700

taaaaccttc actgtcagca gctcggtgac attccaggtt acccgggagg 750

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gctgacagat ccacctctca acgcattgaa gttttataca caccaactgc 850

gatgattagg ccagaccctc cccatcctcg tgagggccag aagctgttgc 900

tacactgtga gggtcgcggc aatccagtcc cccagcagta cctatgggag 950

aaggagggca gtgtgccacc cctgaagatg acccaggaga gtgccctgat 1000

cttcccttt ctcaacaaga gtgacagtgg cacctacggc tgcacagcca 1050

ccagcaacat gggcagctac aaggcctact acacccctcaa tgttaatgac 1100

cccagtccgg tgcctcctc ctccagcacc taccacgcca tcatcggtgg 1150

gatcgtggct ttcattgtct tcctgctgct catcatgctc atcttccttg 1200

gccactactt gatccggcac aaaggaacct acctgacaca tgaggcaaaa 1250

ggctccgacg atgctccaga cgcggacacg gccatcatca atgcagaagg 1300

cgggcagtca ggagggggacg acaagaagga atatttcatc tagaggcgcc 1350
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58

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tgcccacttc ctgcgccccc caggggccct gtggggactg ctggggccgt 1400

caccaacccg gacttgtaca gagcaaccgc agggccgccc ctcccgcttg 1450

ctccccagcc cacccacccc cctgtacaga atgtctgctt tgggtgcggt 1500

tttgtactcg gtttggaatg gggagggagg agggcggggg gaggggaggg 1550

ttgccctcag ccctttccgt ggcttctctg catttgggtt attattattt 1600

ttgtaacaat cccaaatcaa atctgtctcc aggctggaga ggcaggagcc 1650

ctggggtgag aaaagcaaaa aacaaacaaa aaaca 1685
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<210> 44
<211> 398
<212> PRT
<213> Homosapiens

<400> 44

| Met | Gly | Ala | Pro | Ala | Ala | Ser | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Phe |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

| Ala | Cys | Cys | Trp | Ala | Pro | Gly | Gly | Ala | Asn | Leu | Ser | Gln | Asp | Asp |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

| Ser | Gln | Pro | Trp | Thr | Ser | Asp | Glu | Thr | Val | Val | Ala | Gly | Gly | Thr |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |

| Val | Val | Leu | Lys | Cys | Gln | Val | Lys | Asp | His | Glu | Asp | Ser | Ser | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |

| Gln | Trp | Ser | Asn | Pro | Ala | Gln | Gln | Thr | Leu | Tyr | Phe | Gly | Glu | Lys |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 65  |     |     |     | 70  |     |     |     |     |     | 75  |

| Arg | Ala | Leu | Arg | Asp | Asn | Arg | Ile | Gln | Leu | Val | Thr | Ser | Thr | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     | 80  |     |     |     |     | 85  |     |     |     |     |     | 90  |

| His | Glu | Leu | Ser | Ile | Ser | Ile | Ser | Asn | Val | Ala | Leu | Ala | Asp | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 95  |     |     |     | 100 |     |     |     |     | 105 |     |

| Gly | Glu | Tyr | Thr | Cys | Ser | Ile | Phe | Thr | Met | Pro | Val | Arg | Thr | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 110 |     |     |     | 115 |     |     |     |     | 120 |     |

| Lys | Ser | Leu | Val | Thr | Val | Leu | Gly | Ile | Pro | Gln | Lys | Pro | Ile | Ile |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 125 |     |     |     | 130 |     |     |     |     |     | 135 |

| Thr | Gly | Tyr | Lys | Ser | Ser | Leu | Arg | Glu | Lys | Asp | Thr | Ala | Thr | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 140 |     |     |     | 145 |     |     |     |     |     | 150 |

| Asn | Cys | Gln | Ser | Ser | Gly | Ser | Lys | Pro | Ala | Ala | Arg | Leu | Thr | Trp |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 155 |     |     |     | 160 |     |     |     |     |     | 165 |

| Arg | Lys | Gly | Asp | Gln | Glu | Leu | His | Gly | Glu | Pro | Thr | Arg | Ile | Gln |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 170 |     |     |     | 175 |     |     |     |     |     | 180 |

| Glu | Asp | Pro | Asn | Gly | Lys | Thr | Phe | Thr | Val | Ser | Ser | Ser | Val | Thr |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 185 |     |     |     | 190 |     |     |     |     |     | 195 |

| Phe | Gln | Val | Thr | Arg | Glu | Asp | Asp | Gly | Ala | Ser | Ile | Val | Cys | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 200 |     |     |     | 205 |     |     |     |     |     | 210 |

| Val | Asn | His | Glu | Ser | Leu | Lys | Gly | Ala | Asp | Arg | Ser | Thr | Ser | Gln |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

59

```
                215                    220                    225
Arg Ile Glu Val Leu Tyr Thr Pro Thr Ala Met Ile Arg Pro Asp
            230                    235                    240

Pro Pro His Pro Arg Glu Gly Gln Lys Leu Leu Leu His Cys Glu
            245                    250                    255

Gly Arg Gly Asn Pro Val Pro Gln Gln Tyr Leu Trp Glu Lys Glu
            260                    265                    270

Gly Ser Val Pro Pro Leu Lys Met Thr Gln Glu Ser Ala Leu Ile
            275                    280                    285

Phe Pro Phe Leu Asn Lys Ser Asp Ser Gly Thr Tyr Gly Cys Thr
            290                    295                    300

Ala Thr Ser Asn Met Gly Ser Tyr Lys Ala Tyr Tyr Thr Leu Asn
            305                    310                    315

Val Asn Asp Pro Ser Pro Val Pro Ser Ser Ser Ser Thr Tyr His
            320                    325                    330

Ala Ile Ile Gly Gly Ile Val Ala Phe Ile Val Phe Leu Leu Leu
            335                    340                    345

Ile Met Leu Ile Phe Leu Gly His Tyr Leu Ile Arg His Lys Gly
            350                    355                    360

Thr Tyr Leu Thr His Glu Ala Lys Gly Ser Asp Asp Ala Pro Asp
            365                    370                    375

Ala Asp Thr Ala Ile Ile Asn Ala Glu Gly Gly Gln Ser Gly Gly
            380                    385                    390

Asp Asp Lys Lys Glu Tyr Phe Ile
            395
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<210> 45
<211> 2479
<212> DNA
<213> Homosapiens

<400> 45
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gagacagcag ggagattatt ttaccatacg ccctcaggac gttccctcta  150
gctggagttc tggacttcaa cagaacccca tccagtcatt ttgattttgc  200
tgtttatttt ttttttcttt ttcttttttcc caccacattg tatttttattt  250
ccgtacttca gaaatgggcc tacagaccac aaagtggccc agccatgggg  300
cttttttcct gaagtcttgg cttatcattt ccctggggct ctactcacag  350
gtgtccaaac tcctggcctg ccctagtgtg tgccgctgcg acaggaactt  400
tgtctactgt aatgagcgaa gcttgacctc agtgcctctt gggatcccgg  450
agggcgtaac cgtactctac ctccacaaca accaaattaa taatgctgga  500
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tttcctgcag aactgcacaa tgtacagtcg gtgcacacgg tctacctgta 550

tggcaaccaa ctggacgaat tccccatgaa ccttcccaag aatgtcagag 600

ttctccattt gcaggaaaac aatattcaga ccatttcacg ggctgctctt 650

gcccagctct tgaagcttga agagctgcac ctggatgaca actccatatc 700

cacagtgggg gtggaagacg gggccttccg ggaggctatt agcctcaaat 750

tgttgttttt gtctaagaat cacctgagca gtgtgcctgt tgggcttcct 800

gtggacttgc aagagctgag agtggatgaa aatcgaattg ctgtcatatc 850

cgacatggcc ttccagaatc tcacgagctt ggagcgtctt attgtggacg 900

ggaacctcct gaccaacaag ggtatcgccg agggcacctt cagccatctc 950

accaagctca aggaattttc aattgtacgt aattcgctgt cccaccctcc 1000

tcccgatctc ccaggtacgc atctgatcag gctctatttg caggacaacc 1050

agataaacca cattcctttg acagccttct caaatctgcg taagctggaa 1100

cggctggata tatccaacaa ccaactgcgg atgctgactc aaggggtttt 1150

tgataatctc tccaacctga gcagctcac tgctcggaat aaccttggt 1200

tttgtgactg cagtattaaa tgggtcacag aatggctcaa atatatccct 1250

tcatctctca acgtgcgggg tttcatgtgc caaggtcctg aacaagtccg 1300

ggggatggcc gtcagggaat aaaatatgaa tcttttgtcc tgtcccacca 1350

cgaccccgg cctgcctctc ttcaccccag ccccaagtac agcttctccg 1400

accactcagc ctcccaccct ctctattcca aaccctagca gaagctacac 1450

gcctccaact cctaccacat cgaaacttcc cacgattcct gactgggatg 1500

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cattttgtga atgatacttc cattcaagtc agctggctct ctctcttcac 1600

cgtgatggca tacaaactca catgggtgaa aatgggccac agtttagtag 1650

ggggcatcgt tcaggagcgc atagtcagcg gtgagaagca acacctgagc 1700

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gagcagacga cgtcccacag catgggctcc ccctttctgc tggcgggctt 1900

gatcgggggc gcggtgatat ttgtgctggt ggtcttgctc agcgtctttt 1950

gctggcatat gcacaaaaag gggcgctaca cctcccagaa gtggaaatac 2000

aaccgggggcc ggcggaaaga tgattattgc gaggcaggca ccaagaagga 2050

caactccatc ctggagatga cagaaaccag ttttcagatc gtctccttaa 2100
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ataacgatca actccttaaa ggagatttca gactgcagcc catttacacc 2150

ccaaatgggg gcattaatta cacagactgc catatcccca acaacatgcg 2200

atactgcaac agcagcgtgc cagacctgga gcactgccat acgtgacagc 2250

cagaggccca gcgttatcaa ggcggacaat tagactcttg agaacacact 2300

cgtgtgtgca cataaagaca cgcagattac atttgataaa tgttacacag 2350

atgcatttgt gcatttgaat actctgtaat ttatacggtg tactatataa 2400

tgggatttaa aaaaagtgct atctttcta tttcaagtta attacaaaca 2450

gttttgtaac tctttgcttt ttaaatctt 2479
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<210> 46
<211> 660
<212> PRT
<213> Homosapiens

<400> 46

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                20                  25                  30

Ser Lys Leu Leu Ala Cys Pro Ser Val Cys Arg Cys Asp Arg Asn
                35                  40                  45

Phe Val Tyr Cys Asn Glu Arg Ser Leu Thr Ser Val Pro Leu Gly
                50                  55                  60

Ile Pro Glu Gly Val Thr Val Leu Tyr Leu His Asn Asn Gln Ile
                65                  70                  75

Asn Asn Ala Gly Phe Pro Ala Glu Leu His Asn Val Gln Ser Val
                80                  85                  90

His Thr Val Tyr Leu Tyr Gly Asn Gln Leu Asp Glu Phe Pro Met
                95                  100                 105

Asn Leu Pro Lys Asn Val Arg Val Leu His Leu Gln Glu Asn Asn
                110                 115                 120

Ile Gln Thr Ile Ser Arg Ala Ala Leu Ala Gln Leu Leu Lys Leu
                125                 130                 135

Glu Glu Leu His Leu Asp Asp Asn Ser Ile Ser Thr Val Gly Val
                140                 145                 150

Glu Asp Gly Ala Phe Arg Glu Ala Ile Ser Leu Lys Leu Leu Phe
                155                 160                 165

Leu Ser Lys Asn His Leu Ser Ser Val Pro Val Gly Leu Pro Val
                170                 175                 180

Asp Leu Gln Glu Leu Arg Val Asp Glu Asn Arg Ile Ala Val Ile
                185                 190                 195

Ser Asp Met Ala Phe Gln Asn Leu Thr Ser Leu Glu Arg Leu Ile
                200                 205                 210
```

```
Val Asp Gly Asn Leu Leu Thr Asn Lys Gly Ile Ala Glu Gly Thr
                215             220                     225

Phe Ser His Leu Thr Lys Leu Lys Glu Phe Ser Ile Val Arg Asn
                230             235                     240

Ser Leu Ser His Pro Pro Pro Asp Leu Pro Gly Thr His Leu Ile
                245             250                     255

Arg Leu Tyr Leu Gln Asp Asn Gln Ile Asn His Ile Pro Leu Thr
                260             265                     270

Ala Phe Ser Asn Leu Arg Lys Leu Glu Arg Leu Asp Ile Ser Asn
                275             280                     285

Asn Gln Leu Arg Met Leu Thr Gln Gly Val Phe Asp Asn Leu Ser
                290             295                     300

Asn Leu Lys Gln Leu Thr Ala Arg Asn Asn Pro Trp Phe Cys Asp
                305             310                     315

Cys Ser Ile Lys Trp Val Thr Glu Trp Leu Lys Tyr Ile Pro Ser
                320             325                     330

Ser Leu Asn Val Arg Gly Phe Met Cys Gln Gly Pro Glu Gln Val
                335             340                     345

Arg Gly Met Ala Val Arg Glu Leu Asn Met Asn Leu Leu Ser Cys
                350             355                     360

Pro Thr Thr Thr Pro Gly Leu Pro Leu Phe Thr Pro Ala Pro Ser
                365             370                     375

Thr Ala Ser Pro Thr Thr Gln Pro Pro Thr Leu Ser Ile Pro Asn
                380             385                     390

Pro Ser Arg Ser Tyr Thr Pro Pro Thr Pro Thr Thr Ser Lys Leu
                395             400                     405

Pro Thr Ile Pro Asp Trp Asp Gly Arg Glu Arg Val Thr Pro Pro
                410             415                     420

Ile Ser Glu Arg Ile Gln Leu Ser Ile His Phe Val Asn Asp Thr
                425             430                     435

Ser Ile Gln Val Ser Trp Leu Ser Leu Phe Thr Val Met Ala Tyr
                440             445                     450

Lys Leu Thr Trp Val Lys Met Gly His Ser Leu Val Gly Gly Ile
                455             460                     465

Val Gln Glu Arg Ile Val Ser Gly Glu Lys Gln His Leu Ser Leu
                470             475                     480

Val Asn Leu Glu Pro Arg Ser Thr Tyr Arg Ile Cys Leu Val Pro
                485             490                     495

Leu Asp Ala Phe Asn Tyr Arg Ala Val Glu Asp Thr Ile Cys Ser
                500             505                     510

Glu Ala Thr Thr His Ala Ser Tyr Leu Asn Asn Gly Ser Asn Thr
                515             520                     525
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63

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Ala Ser Ser His Glu Gln Thr Thr Ser His Ser Met Gly Ser Pro
            530                 535                 540

Phe Leu Leu Ala Gly Leu Ile Gly Gly Ala Val Ile Phe Val Leu
            545                 550                 555

Val Val Leu Leu Ser Val Phe Cys Trp His Met His Lys Lys Gly
            560                 565                 570

Arg Tyr Thr Ser Gln Lys Trp Lys Tyr Asn Arg Gly Arg Arg Lys
            575                 580                 585

Asp Asp Tyr Cys Glu Ala Gly Thr Lys Lys Asp Asn Ser Ile Leu
            590                 595                 600

Glu Met Thr Glu Thr Ser Phe Gln Ile Val Ser Leu Asn Asn Asp
            605                 610                 615

Gln Leu Leu Lys Gly Asp Phe Arg Leu Gln Pro Ile Tyr Thr Pro
            620                 625                 630

Asn Gly Gly Ile Asn Tyr Thr Asp Cys His Ile Pro Asn Asn Met
            635                 640                 645

Arg Tyr Cys Asn Ser Ser Val Pro Asp Leu Glu His Cys His Thr
            650                 655                 660
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<210> 47
<211> 2573
<212> DNA
<213> Murine

<400> 47

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gcttcagcct cccgggtgct ctgaccgcac gctcccggct gctaggctcc  150

ccggcaccgg cctcgccatg ccgccaccgc ccgggcccgc cgccgccctg  200

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cgaccccgag acggagtatt tctatccacg atatcaagag tgcatgagaa  450

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tatctgccaa gacctcatgg gcaacttctt ctgcgtgtgc acagatggct  600

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cgagggggcc taaaactatc cccagacatg gatacttgtg aggacatctt 1000

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gacctggtgg gagctggctg gaaggggctg ggctagaggg gctggcagtt 2450

tgcagcagaa cggatgtgaa gaaataatt ctctattatt tttattacta 2500

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cttttaaaa aaaaaaaaaa aaa 2573
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  <212> PRT
  <213> Murine

  <400> 48
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   Leu Leu Leu Leu Leu Ala Ser Glu Ser Ser His Thr Val Leu Leu
                  20                  25                  30

   Arg Ala Arg Glu Ala Ala Gln Phe Leu Arg Pro Arg Gln Arg Arg
                  35                  40                  45

   Ala Tyr Gln Val Phe Glu Glu Ala Lys Gln Gly His Leu Glu Arg
                  50                  55                  60

   Glu Cys Val Glu Glu Val Cys Ser Lys Glu Glu Ala Arg Glu Val
                  65                  70                  75

   Phe Glu Asn Asp Pro Glu Thr Glu Tyr Phe Tyr Pro Arg Tyr Gln
                  80                  85                  90

   Glu Cys Met Arg Lys Tyr Gly Arg Pro Glu Glu Lys Asn Pro Asp
                  95                  100                 105

   Phe Ala Lys Cys Val Gln Asn Leu Pro Asp Gln Cys Thr Pro Asn
                  110                 115                 120

   Pro Cys Asp Lys Lys Gly Thr His Ile Cys Gln Asp Leu Met Gly
                  125                 130                 135

   Asn Phe Phe Cys Val Cys Thr Asp Gly Trp Gly Gly Arg Leu Cys
                  140                 145                 150

   Asp Lys Asp Val Asn Glu Cys Val Gln Lys Asn Gly Gly Cys Ser
                  155                 160                 165

   Gln Val Cys His Asn Lys Pro Gly Ser Phe Gln Cys Ala Cys His
                  170                 175                 180

   Ser Gly Phe Ser Leu Ala Ser Asp Gly Gln Thr Cys Gln Asp Ile
                  185                 190                 195

   Asp Glu Cys Thr Asp Ser Asp Thr Cys Gly Asp Ala Arg Cys Lys
                  200                 205                 210

   Asn Leu Pro Gly Ser Tyr Ser Cys Leu Cys Asp Glu Gly Tyr Thr
                  215                 220                 225

   Tyr Ser Ser Lys Glu Lys Thr Cys Gln Asp Val Asp Glu Cys Gln
                  230                 235                 240
```

```
Gln Asp Arg Cys Glu Gln Thr Cys Val Asn Ser Pro Gly Ser Tyr
                245                 250                 255

Thr Cys His Cys Asp Gly Arg Gly Gly Leu Lys Leu Ser Pro Asp
                260                 265                 270

Met Asp Thr Cys Glu Asp Ile Leu Pro Cys Val Pro Phe Ser Met
                275                 280                 285

Ala Lys Ser Val Lys Ser Leu Tyr Leu Gly Arg Met Phe Ser Gly
                290                 295                 300

Thr Pro Val Ile Arg Leu Arg Phe Lys Arg Leu Gln Pro Thr Arg
                305                 310                 315

Leu Leu Ala Glu Phe Asp Phe Arg Thr Phe Asp Pro Glu Gly Val
                320                 325                 330

Leu Phe Phe Ala Gly Gly Arg Ser Asp Ser Thr Trp Ile Val Leu
                335                 340                 345

Gly Leu Arg Ala Gly Arg Leu Glu Leu Gln Leu Arg Tyr Asn Gly
                350                 355                ·360

Val Gly Arg Ile Thr Ser Ser Gly Pro Thr Ile Asn His Gly Met
                365                 370                 375

Trp Gln Thr Ile Ser Val Glu Glu Leu Glu Arg Asn Leu Val Ile
                380                 385                 390

Lys Val Asn Lys Asp Ala Val Met Lys Ile Ala Val Ala Gly Glu
                395                 400                 405

Leu Phe Gln Leu Glu Arg Gly Leu Tyr His Leu Asn Leu Thr Val
                410                 415                 420

Gly Gly Ile Pro Phe Lys Glu Ser Glu Leu Val Gln Pro Ile Asn
                425                 430                 435

Pro Arg Leu Asp Gly Cys Met Arg Ser Trp Asn Trp Leu Asn Gly
                440                 445                 450

Glu Asp Ser Ala Ile Gln Glu Thr Val Lys Ala Asn Thr Lys Met
                455                 460                 465

Gln Cys Phe Ser Val Thr Glu Arg Gly Ser Phe Phe Pro Gly Asn
                470                 475                 480

Gly Phe Ala Thr Tyr Arg Leu Asn Tyr Thr Arg Thr Ser Leu Asp
                485                 490                 495

Val Gly Thr Glu Thr Thr Trp Glu Val Lys Val Val Ala Arg Ile
                500                 505                 510

Arg Pro Ala Thr Asp Thr Gly Val Leu Leu Ala Leu Val Gly Asp
                515                 520                 525

Asp Asp Val Val Ile Ser Val Ala Leu Val Asp Tyr His Ser Thr
                530                 535                 540

Lys Lys Leu Lys Lys Gln Leu Val Val Leu Ala Val Glu Asp Val
                545                 550                 555
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67

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Ala Leu Ala Leu Met Glu Ile Lys Val Cys Asp Ser Gln Glu His
                560             565                     570

Thr Val Thr Val Ser Leu Arg Glu Gly Glu Ala Thr Leu Glu Val
                575                 580                     585

Asp Gly Thr Lys Gly Gln Ser Glu Val Ser Thr Ala Gln Leu Gln
                590                 595                     600

Glu Arg Leu Asp Thr Leu Lys Thr His Leu Gln Gly Ser Val His
                605                 610                     615

Thr Tyr Val Gly Gly Leu Pro Glu Val Ser Val Ile Ser Ala Pro
                620                 625                     630

Val Thr Ala Phe Tyr Arg Gly Cys Met Thr Leu Glu Val Asn Gly
                635                 640                     645

Lys Ile Leu Asp Leu Asp Thr Ala Ser Tyr Lys His Ser Asp Ile
                650                 655                     660

Thr Ser His Ser Cys Pro Pro Val Glu His Ala Thr Pro
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<211> 2586
<212> DNA
<213> Homosapiens

<400> 49

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ccgcagcgca actcggtcca gtcggggcgg cggctgcggg cgcagagcgg 150

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gcccggcccg gctctcagct acccgcagga ggaggccacc ctcaatgaga 300

tgttccgcga ggttgaggaa ctgatggagg acacgcagca caaattgcgc 350

agcgcggtgg aagagatgga ggcagaagaa gctgctgcta aagcatcatc 400

agaagtgaac ctggcaaact acctcccag ctatcacaat gagaccaaca 450

cagacacgaa ggttggaaat aataccatcc atgtgcaccg agaaattcac 500

aagataacca caaccagac tggacaaatg gtcttttcag agacagttat 550

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acctgccagc catgccgggg ccagaggatg ctctgcaccc gggacagtga 700

gtgctgtgga gaccagctgt gtgtctgggg tcactgcacc aaaatggcca 750

ccagggggcag caatgggacc atctgtgaca accagaggga ctgccagccg 800

gggctgtgct gtgccttcca gagaggcctg ctgttccctg tgtgcacacc 850
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68

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acctcatcac ctgggagcta gagcctgatg gagccttgga ccgatgccct 950

tgtgccagtg gcctcctctg ccagccccac agccacagcc tggtgtatgt 1000

gtgcaagccg accttcgtgg ggagccgtga ccaagatggg gagatcctgc 1050

tgcccagaga ggtccccgat gagtatgaag ttggcagctt catggaggag 1100

gtgcgccagg agctggagga cctggagagg agcctgactg aagagatggc 1150

gctgggggag cctgcggctg ccgccgctgc actgctggga ggggaagaga 1200

tttagatctg gaccaggctg tgggtagatg tgcaatagaa atagctaatt 1250

tatttcccca ggtgtgtgct ttaggcgtgg gctgaccagg cttcttccta 1300

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tccagattat tggctgcttt gcctctacca gttggcagac agccgtttgt 1500

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ctccactacc ccacaccagc cttggtgcca ccaaaagtgc tccccaaaag 2000

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aactaattct cacatccctc taaaagtaaa ctactgttag gaacagcagt 2100

gttctcacag tgtggggcag ccgtccttct aatgaagaca atgatattga 2150

cactgtccct ctttggcagt tgcattagta actttgaaag gtatatgact 2200

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caattatcaa ccacgtggag aaaatcaaac cgagcagggc tgtgtgaaac 2350

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tgatgttttc aggtgtcatg gactgttgcc accatgtatt catccagagt 2450
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tcttaaagtt taaagttgca catgattgta taagcatgct ttctttgagt 2500

tttaaattat gtataaacat aagttgcatt tagaaatcaa gcataaatca 2550

cttcaactgc aaaaaaaaaa aaaaaaaaaa aaaaaa 2586

<210> 50
<211> 350
<212> PRT
<213> Homosapiens

<400> 50

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

| Ala | Val | Pro | Thr | Ala | Pro | Ala | Pro | Ala | Pro | Thr | Ala | Thr | Ser | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |

| Pro | Val | Lys | Pro | Gly | Pro | Ala | Leu | Ser | Tyr | Pro | Gln | Glu | Glu | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |

| Thr | Leu | Asn | Glu | Met | Phe | Arg | Glu | Val | Glu | Glu | Leu | Met | Glu | Asp |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |

| Thr | Gln | His | Lys | Leu | Arg | Ser | Ala | Val | Glu | Glu | Met | Glu | Ala | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 65  |     |     |     | 70  |     |     |     |     |     | 75  |

| Glu | Ala | Ala | Ala | Lys | Ala | Ser | Ser | Glu | Val | Asn | Leu | Ala | Asn | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 80  |     |     |     | 85  |     |     |     |     |     | 90  |

| Pro | Pro | Ser | Tyr | His | Asn | Glu | Thr | Asn | Thr | Asp | Thr | Lys | Val | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 95  |     |     |     | 100 |     |     |     |     |     | 105 |

| Asn | Asn | Thr | Ile | His | Val | His | Arg | Glu | Ile | His | Lys | Ile | Thr | Asn |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 110 |     |     |     | 115 |     |     |     |     |     | 120 |

| Asn | Gln | Thr | Gly | Gln | Met | Val | Phe | Ser | Glu | Thr | Val | Ile | Thr | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 125 |     |     |     | 130 |     |     |     |     |     | 135 |

| Val | Gly | Asp | Glu | Glu | Gly | Arg | Arg | Ser | His | Glu | Cys | Ile | Ile | Asp |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 140 |     |     |     | 145 |     |     |     |     |     | 150 |

| Glu | Asp | Cys | Gly | Pro | Ser | Met | Tyr | Cys | Gln | Phe | Ala | Ser | Phe | Gln |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 155 |     |     |     | 160 |     |     |     |     |     | 165 |

| Tyr | Thr | Cys | Gln | Pro | Cys | Arg | Gly | Gln | Arg | Met | Leu | Cys | Thr | Arg |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 170 |     |     |     | 175 |     |     |     |     |     | 180 |

| Asp | Ser | Glu | Cys | Cys | Gly | Asp | Gln | Leu | Cys | Val | Trp | Gly | His | Cys |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 185 |     |     |     | 190 |     |     |     |     |     | 195 |

| Thr | Lys | Met | Ala | Thr | Arg | Gly | Ser | Asn | Gly | Thr | Ile | Cys | Asp | Asn |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 200 |     |     |     | 205 |     |     |     |     |     | 210 |

| Gln | Arg | Asp | Cys | Gln | Pro | Gly | Leu | Cys | Cys | Ala | Phe | Gln | Arg | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 215 |     |     |     | 220 |     |     |     |     |     | 225 |

| Leu | Leu | Phe | Pro | Val | Cys | Thr | Pro | Leu | Pro | Val | Glu | Gly | Glu | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 230 |     |     |     | 235 |     |     |     |     |     | 240 |

| Cys | His | Asp | Pro | Ala | Ser | Arg | Leu | Leu | Asp | Leu | Ile | Thr | Trp | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |

```
Leu Glu Pro Asp Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly
            260                 265                 270

Leu Leu Cys Gln Pro His Ser His Ser Leu Val Tyr Val Cys Lys
            275                 280                 285


Pro Thr Phe Val Gly Ser Arg Asp Gln Asp Gly Glu Ile Leu Leu
            290                 295                 300

Pro Arg Glu Val Pro Asp Glu Tyr Glu Val Gly Ser Phe Met Glu
            305                 310                 315

Glu Val Arg Gln Glu Leu Glu Asp Leu Glu Arg Ser Leu Thr Glu
            320                 325                 330

Glu Met Ala Leu Gly Glu Pro Ala Ala Ala Ala Ala Ala Leu Leu
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Gly Gly Glu Glu Ile
            350
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<210> 51
<211> 1650
<212> DNA
<213> Homosapiens

<400> 51
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gcgctctccc gtcccgcggt ggttgctgct ctgccgctg  ctgctgggcc 100

tgaacgcagg agctgtcatt gactggccca cagaggaggg caaggaagta 150

tgggattatg tgacggtccg caaggatgcc tacatgttct ggtggctcta 200

ttatgccacc aactcctgca agaacttctc agaactgccc ctggtcatgt 250

ggcttcaggg cggtccaggc ggttctagca ctggatttgg aaactttgag 300

gaaattgggc cccttgacag tgatctcaaa ccacggaaaa ccacctggct 350

ccaggctgcc agtctcctat ttgtggataa tcccgtgggc actgggttca 400

gttatgtgaa tggtagtggt gcctatgcca aggacctggc tatggtggct 450

tcagacatga tggttctcct gaagaccttc ttcagttgcc acaaagaatt 500

ccagacagtt ccattctaca ttttctcaga gtcctatgga ggaaaaatgg 550

cagctggcat tggtctagag ctttataagg ccattcagcg agggaccatc 600

aagtgcaact ttgcgggggt tgccttgggt gattcctgga tctcccctgt 650

tgattcggtg ctctcctggg gaccttacct gtacagcatg tctcttctcg 700

aagacaaagg tctggcagag gtgtctaagg ttgcagagca agtactgaat 750

gccgtaaata aggggctcta cagagaggcc acagagctgt gggggaaagc 800

agaaatgatc attgaacaga acacagatgg ggtgaacttc tataacatct 850

taactaaaag cactcccacg tctacaatgg agtcgagtct agaattcaca 900
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cagagccacc tagtttgtct ttgtcagcgc cacgtgagac acctacaacg 950

agatgcctta agccagctca tgaatggccc catcagaaag aagctcaaaa 1000

ttattcctga ggatcaatcc tggggaggcc aggctaccaa cgtctttgtg 1050

aacatggagg aggacttcat gaagccagtc attagcattg tggacgagtt 1100

gctggaggca gggatcaacg tgacggtgta taatggacag ctggatctca 1150

tcgtagatac catgggtcag gaggcctggg tgcggaaact gaagtggcca 1200

gaactgccta aattcagtca gctgaagtgg aaggccctgt acagtgaccc 1250

taaatctttg gaaacatctg cttttgtcaa gtcctacaag aaccttgctt 1300

tctactggat tctgaaagct ggtcatatgg ttccttctga ccaaggggac 1350

atggctctga agatgatgag actggtgact cagcaagaat aggatggatg 1400

gggctggaga tgagctggtt tggccttggg gcacagagct gagctgaggc 1450

cgctgaagct gtaggaagcg ccattcttcc ctgtatctaa ctggggctgt 1500

gatcaagaag gttctgacca gcttctgcag aggataaaat cattgtctct 1550

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<210> 52
<211> 452
<212> PRT
<213> Homosapiens

<400> 52

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 1               5                  10                  15

Leu Leu Pro Leu Leu Leu Gly Leu Asn Ala Gly Ala Val Ile Asp
                20                  25                  30

Trp Pro Thr Glu Glu Gly Lys Glu Val Trp Asp Tyr Val Thr Val
                35                  40                  45

Arg Lys Asp Ala Tyr Met Phe Trp Trp Leu Tyr Tyr Ala Thr Asn
                50                  55                  60

Ser Cys Lys Asn Phe Ser Glu Leu Pro Leu Val Met Trp Leu Gln
                65                  70                  75

Gly Gly Pro Gly Gly Ser Ser Thr Gly Phe Gly Asn Phe Glu Glu
                80                  85                  90

Ile Gly Pro Leu Asp Ser Asp Leu Lys Pro Arg Lys Thr Thr Trp
                95                  100                 105

Leu Gln Ala Ala Ser Leu Leu Phe Val Asp Asn Pro Val Gly Thr
                110                 115                 120

Gly Phe Ser Tyr Val Asn Gly Ser Gly Ala Tyr Ala Lys Asp Leu
                125                 130                 135
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Ala Met Val Ala Ser Asp Met Met Val Leu Leu Lys Thr Phe Phe
              140              145              150

Ser Cys His Lys Glu Phe Gln Thr Val Pro Phe Tyr Ile Phe Ser
              155              160              165

Glu Ser Tyr Gly Gly Lys Met Ala Ala Gly Ile Gly Leu Glu Leu
              170              175              180

Tyr Lys Ala Ile Gln Arg Gly Thr Ile Lys Cys Asn Phe Ala Gly
              185              190              195

Val Ala Leu Gly Asp Ser Trp Ile Ser Pro Val Asp Ser Val Leu
              200              205              210

Ser Trp Gly Pro Tyr Leu Tyr Ser Met Ser Leu Leu Glu Asp Lys
              215              220              225

Gly Leu Ala Glu Val Ser Lys Val Ala Glu Gln Val Leu Asn Ala
              230              235              240

Val Asn Lys Gly Leu Tyr Arg Glu Ala Thr Glu Leu Trp Gly Lys
              245              250              255

Ala Glu Met Ile Ile Glu Gln Asn Thr Asp Gly Val Asn Phe Tyr
              260              265              270

Asn Ile Leu Thr Lys Ser Thr Pro Thr Ser Thr Met Glu Ser Ser
              275              280              285

Leu Glu Phe Thr Gln Ser His Leu Val Cys Leu Cys Gln Arg His
              290              295              300

Val Arg His Leu Gln Arg Asp Ala Leu Ser Gln Leu Met Asn Gly
              305              310              315

Pro Ile Arg Lys Lys Leu Lys Ile Ile Pro Glu Asp Gln Ser Trp
              320              325              330

Gly Gly Gln Ala Thr Asn Val Phe Val Asn Met Glu Glu Asp Phe
              335              340              345

Met Lys Pro Val Ile Ser Ile Val Asp Glu Leu Leu Glu Ala Gly
              350              355              360

Ile Asn Val Thr Val Tyr Asn Gly Gln Leu Asp Leu Ile Val Asp
              365              370              375

Thr Met Gly Gln Glu Ala Trp Val Arg Lys Leu Lys Trp Pro Glu
              380              385              390

Leu Pro Lys Phe Ser Gln Leu Lys Trp Lys Ala Leu Tyr Ser Asp
              395              400              405

Pro Lys Ser Leu Glu Thr Ser Ala Phe Val Lys Ser Tyr Lys Asn
              410              415              420

Leu Ala Phe Tyr Trp Ile Leu Lys Ala Gly His Met Val Pro Ser
              425              430              435

Asp Gln Gly Asp Met Ala Leu Lys Met Met Arg Leu Val Thr Gln
              440              445              450
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73

Gln Glu

<210> 53
<211> 1857
<212> DNA
<213> Homosapiens

<400> 53
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tggcgatcct gttgtgctcc ctggcattgg gcagtgttac agtgcactct 150

tctgaacctg aagtcagaat tcctgagaat aatcctgtga agttgtcctg 200

tgcctactcg ggcttttctt ctccccgtgt ggagtggaag tttgaccaag 250

gagacaccac cagactcgtt tgctataata caagatcac agcttcctat 300

gaggaccggg tgaccttctt gccaactggt atcaccttca agtccgtgac 350

acgggaagac actgggacat acacttgtat ggtctctgag gaaggcggca 400

acagctatgg ggaggtcaag gtcaagctca tcgtgcttgt gcctccatcc 450

aagcctacag ttaacatccc ctcctctgcc accattggga accgggcagt 500

gctgacatgc tcagaacaag atggttcccc accttctgaa tacacctggt 550

tcaaagatgg gatagtgatg cctacgaatc ccaaaagcac ccgtgccttc 600

agcaactctt cctatgtcct gaatcccaca acaggagagc tggtctttga 650

tcccctgtca gcctctgata ctggagaata cagctgtgag gcacggaatg 700

ggtatgggac acccatgact tcaaatgctg tgcgcatgga agctgtggag 750

cggaatgtgg gggtcatcgt ggcagccgtc cttgtaaccc tgattctcct 800

gggaatcttg gtttttggca tctggtttgc ctatagccga ggccactttg 850

acagaacaaa gaaagggact tcgagtaaga aggtgattta cagccagcct 900

agtgcccgaa gtgaaggaga attcaaacag acctcgtcat tcctggtgtg 950

agcctggtcg gctcaccgcc tatcatctgc atttgcctta ctcaggtgct 1000

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cttctacacc ccacagggcc ccctacttct tcggatgtgt ttttaataat 1100

gtcagctatg tgccccatcc tccttcatgc cctccctccc tttcctacca 1150

ctgctgagtg gcctggaact tgtttaaagt gtttattccc catttctttg 1200

agggatcagg aaggaatcct gggtatgcca ttgacttccc ttctaagtag 1250

acagcaaaaa tggcgggggt cgcaggaatc tgcactcaac tgcccacctg 1300

gctggcaggg atctttgaat aggtatcttg agcttggttc tgggctcttt 1350
```

74

```
ccttgtgtac tgacgaccag ggccagctgt tctagagcgg gaattagagg 1400

ctagagcggc tgaaatggtt gtttggtgat gacactgggg tccttccatc 1450

tctggggccc actctcttct gtcttcccat gggaagtgcc actgggatcc 1500

ctctgccctg tcctcctgaa tacaagctga ctgacattga ctgtgtctgt·1550

ggaaaatggg agctcttgtt gtggagagca tagtaaattt tcagagaact 1600

tgaagccaaa aggatttaaa accgctgctc taaagaaaag aaaactggag 1650

gctgggcgca gtggctcacg cctgtaatcc cagaggctga ggcaggcgga 1700

tcacctgagg tcgggagttc gggatcagcc tgaccaacat ggagaaaccc 1750

tactggaaat acaaagttag ccaggcatgg tggtgcatgc ctgtagtccc 1800

agctgctcag gagcctggca acaagagcaa aactccagct caaaaaaaaa 1850

aaaaaaa 1857
```

<210> 54
<211> 299
<212> PRT
<213> Homosapiens

<400> 54

```
Met Gly Thr Lys Ala Gln Val Glu Arg Lys Leu Leu Cys Leu Phe
 1               5                  10                  15

Ile Leu Ala Ile Leu Leu Cys Ser Leu Ala Leu Gly Ser Val Thr
                20                  25                  30

Val His Ser Ser Glu Pro Glu Val Arg Ile Pro Glu Asn Asn Pro
                35                  40                  45

Val Lys Leu Ser Cys Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val
                50                  55                  60

Glu Trp Lys Phe Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr
                65                  70                  75

Asn Asn Lys Ile Thr Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu
                80                  85                  90

Pro Thr Gly Ile Thr Phe Lys Ser Val Thr Arg Glu Asp Thr Gly
                95                  100                 105

Thr Tyr Thr Cys Met Val Ser Glu Glu Gly Gly Asn Ser Tyr Gly
                110                 115                 120

Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro Ser Lys Pro
                125                 130                 135

Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg Ala Val
                140                 145                 150

Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr Thr
                155                 160                 165

Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr
                170                 175                 180
```

```
Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly
            185                 190                 195

Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr
            200                 205                 210

Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn
            215                 220                 225

Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val
            230                 235                 240

Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe
            245                 250                 255

Gly Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys
            260                 265                 270

Lys Gly Thr Ser Ser Lys Lys Val Ile Tyr Ser Gln Pro Ser Ala
            275                 280                 285

Arg Ser Glu Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val
            290                 295
```

<210> 55
<211> 1679
<212> DNA
<213> Homosapiens

<400> 55
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gttgtgtcct tcagcaaaac agtggattta aatctccttg cacaagcttg   50

agagcaacac aatctatcag gaaagaaaga aagaaaaaaa ccgaacctga  100

caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccatccagcc  150

aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc  200

tgtgtctctt ccaaggagtg cccgtgcgca gcggagatgc caccttcccc  250

aaagctatgg acaacgtgac ggtccggcag ggggagagcg ccaccctcag  300

gtgcactatt gacaaccggg tcacccgggt ggcctggcta aaccgcagca  350

ccatcctcta tgctgggaat gacaagtggt gcctggatcc tcgcgtggtc  400

cttctgagca cacccaaac gcagtacagc atcgagatcc agaacgtgga  450

tgtgtatgac gagggccctt acacctgctc ggtgcagaca gacaaccacc  500

caaagacctc tagggtccac ctcattgtgc aagtatctcc caaaattgta  550

gagatttctt cagatatctc cattaatgaa gggaacaata ttagcctcac  600

ctgcatagca actggtagac cagagcctac ggttacttgg agacacatct  650

ctcccaaagc ggttggcttt gtgagtgaag acgaatactt ggaaattcag  700

ggcatcaccc gggagcagtc aggggactac gagtgcagtg cctccaatga  750

cgtggccgcg cccgtggtac ggagagtaaa ggtcaccgtg aactatccac  800

catacatttc agaagccaag ggtacaggtg tccccgtggg acaaaagggg  850
```

```
acactgcagt gtgaagcctc agcagtcccc tcagcagaat tccagtggta 900

caaggatgac aaaagactga ttgaaggaaa gaaagggtg aaagtggaaa 950

acagaccttt cctctcaaaa ctcatcttct tcaatgtctc tgaacatgac 1000

tatgggaact acacttgcgt ggcctccaac aagctgggcc acaccaatgc 1050

cagcatcatg ctatttggtc caggcgccgt cagcgaggtg agcaacggca 1100

cgtcgaggag ggcaggctgc gtctggctgc tgcctcttct ggtcttgcac 1150

ctgcttctca aattttgatg tgagtgccac ttccccaccc gggaaaggct 1200

gccgccacca ccaccaccaa cacaacagca atggcaacac cgacagcaac 1250

caatcagata tatacaaatg aaattagaag aaacacagcc tcatgggaca 1300

gaaatttgag ggagggggaac aaagaatact ttggggggaa aagagtttta 1350

aaaaagaaat tgaaaattgc cttgcagata tttaggtaca atggagtttt 1400

cttttcccaa acgggaagaa cacagcacac ccggcttgga cccactgcaa 1450

gctgcatcgt gcaacctctt tggtgccagt gtgggcaagg gctcagcctc 1500

tctgcccaca gagtgccccc acgtggaaca ttctggagct ggccatccca 1550

aattcaatca gtccatagag acgaacagaa tgagaccttc cggcccaagc 1600

gtggcgctgc gggcactttg gtagactgtg ccaccacggc gtgtgttgtg 1650

aaacgtgaaa taaaaagagc aaaaaaaaa 1679
```

```
<210> 56
<211> 344
<212> PRT
<213> Homosapiens

<400> 56
 Met Lys Thr Ile Gln Pro Lys Met His Asn Ser Ile Ser Trp Ala
  1               5                  10                  15

 Ile Phe Thr Gly Leu Ala Ala Leu Cys Leu Phe Gln Gly Val Pro
                  20                  25                  30

 Val Arg Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val
                  35                  40                  45

 Thr Val Arg Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp
                  50                  55                  60

 Asn Arg Val Thr Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu
                  65                  70                  75

 Tyr Ala Gly Asn Asp Lys Trp Cys Leu Asp Pro Arg Val Val Leu
                  80                  85                  90

 Leu Ser Asn Thr Gln Thr Gln Tyr Ser Ile Glu Ile Gln Asn Val
                  95                 100                 105

 Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr Asp
                 110                 115                 120
```

77

```
Asn His Pro Lys Thr Ser Arg Val His Leu Ile Val Gln Val Ser
                 125             130             135

Pro Lys Ile Val Glu Ile Ser Ser Asp Ile Ser Ile Asn Glu Gly
                 140             145             150

Asn Asn Ile Ser Leu Thr Cys Ile Ala Thr Gly Arg Pro Glu Pro
                 155             160             165

Thr Val Thr Trp Arg His Ile Ser Pro Lys Ala Val Gly Phe Val
                 170             175             180

Ser Glu Asp Glu Tyr Leu Glu Ile Gln Gly Ile Thr Arg Glu Gln
      .          185             190             195

Ser Gly Asp Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala Ala Pro
                 200             205             210

Val Val Arg Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr Ile
                 215             220             225

Ser Glu Ala Lys Gly Thr Gly Val Pro Val Gly Gln Lys Gly Thr
                 230             235             240

Leu Gln Cys Glu Ala Ser Ala Val Pro Ser Ala Glu Phe Gln Trp
                 245             250             255

Tyr Lys Asp Asp Lys Arg Leu Ile Glu Gly Lys Lys Gly Val Lys
                 260             265             270

Val Glu Asn Arg Pro Phe Leu Ser Lys Leu Ile Phe Phe Asn Val
                 275             280             285

Ser Glu His Asp Tyr Gly Asn Tyr Thr Cys Val Ala Ser Asn Lys
                 290             295             300

Leu Gly His Thr Asn Ala Ser Ile Met Leu Phe Gly Pro Gly Ala
                 305             310             315

Val Ser Glu Val Ser Asn Gly Thr Ser Arg Arg Ala Gly Cys Val
                 320             325             330

Trp Leu Leu Pro Leu Leu Val Leu His Leu Leu Leu Lys Phe
                 335             340
```

<210> 57
<211> 1777
<212> DNA
<213> Homosapiens

<220>
<221> unsure
<222> 439, 647
<223> unknown base

<400> 57
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 cgcggcccct actcgagtgg ctggcgcggg cgcgcgtgcg ctcggacggc  100

 gcgtgccagg ggccgcggcg cctgcggggc gaggctctgg acgccctgcg  150

 gccctgggac ctgcgctgcc ctggggacgc ggcgcaggaa gaggaagagc  200
```

78

tggaagagcg ggctgtggcc gggccccgcg cccctccgcg cggccctccg 250

cgcggccccg gggaggagcg ggcagtcgcg ccttgccctc gcgcctgcgt 300

gtgcgtcccc gagtcccggc acagcagctg cgagggctgc ggcctgcagg 350

cggtgccccg cggcttcccc agcgacaccc agctcctgga cctgaggcgg 400

aaccacttcc cctcggtgcc ccgagcggcc ttccccggnc tgggccacct 450

ggtgtcgctg cacctgcagc actgcggcat cgcggagctg gaagcgggcg 500

ccctggccgg gctgggccgc ctgatctacc tgtacctctc cgacaaccag 550

ctcgcaggcc tcagcgctgc tgcccttgaa ggggctcccc gcctcggcta 600

cctgtaccta gaacgcaacc gtttcctgca ggtgccaggg gctgccntgc 650

gcgccctgcc cagcctcttc tccctgcacc tgcaggacaa cgctgtggac 700

cgcctggcac ctggggacct ggggagaaca cgggccttgc gctgggtcta 750

cctgagtgga aaccgcatca ccgaagtgtc ccttggggcg ctgggcccag 800

ctcgggagct ggagaagctg cacctggaca ggaatcagct gcgagaggtg 850

cccactgggg ccttggaggg gctgcctgcc ctcctggagc tgcagctctc 900

gggcaaccca ctcagggcct tgcgtgacgg agccttccag cctgtgggca 950

ggtcgctgca gcacctcttc ctgaacagca gtggcctgga gcagatttgt 1000

cctggggcct tttcaggcct ggggcccggg ctccagagcc tgcacctgca 1050

gaagaaccag cttcgggccc tgcctgccct gcccagtctc agccagctgg 1100

agctcatcga cctcagcagc aatcccttcc cctgtgactg ccagctgctt 1150

ccgctgcaca ggtggcttac tgggctgaac ctgcgggtgg gggccacctg 1200

cgccacccct cccaatgccc gtggccagag ggtgaaggct gcagctgctg 1250

tctttgaaga ctgcccgggc tgggctgcca gaaaggccaa gcggacacca 1300

gcctccaggc ccagtgccag gagaaccccc atcaaaggaa gacagtgtgg 1350

agcagataag aacatcctct tccccacatg gtaccacact gtggagccca 1400

cctcgctgtc ataggcctgc ggctctgaag gatggctttg cccgctcccg 1450

ctctgcccct caagtggaac ccaagctggg ctcagaatct gtagagtgag 1500

gccccaccaa gggaaacgac acccacggcc tgagagccag gtggagtcct 1550

gccactcagc tgcctgcctt tgctcccacc ctctcccacc ctcaaagagg 1600

tctcgagggg acactctgaa ggcacctggc tcagaaccac tgccatccaa 1650

ggagcgagga gtcccagggc tgagcaaatg cagcggggag gtcggcagtt 1700

cccctgcttc ccgatcctca ttttctgctt cacttgactc ctccagatag 1750

gagctgctct cactgcccac actgctg 1777

<210> 58
<211> 470
<212> PRT
<213> Homosapiens

<220>
<221> unsure
<222> 216
<223> unknown amino acid

<400> 58
```
Leu Arg Arg Leu Arg Leu Gln Gly Asn Pro Leu Trp Cys Gly Cys
 1               5                  10                  15

Gln Ala Arg Pro Leu Leu Glu Trp Leu Ala Arg Ala Arg Val Arg
            20                  25                  30

Ser Asp Gly Ala Cys Gln Gly Pro Arg Arg Leu Arg Gly Glu Ala
            35                  40                  45

Leu Asp Ala Leu Arg Pro Trp Asp Leu Arg Cys Pro Gly Asp Ala
            50                  55                  60

Ala Gln Glu Glu Glu Glu Leu Glu Glu Arg Ala Val Ala Gly Pro
            65                  70                  75

Arg Ala Pro Pro Arg Gly Pro Pro Arg Gly Pro Gly Glu Glu Arg
            80                  85                  90

Ala Val Ala Pro Cys Pro Arg Ala Cys Val Cys Val Pro Glu Ser
            95                  100                 105

Arg His Ser Ser Cys Glu Gly Cys Gly Leu Gln Ala Val Pro Arg
            110                 115                 120

Gly Phe Pro Ser Asp Thr Gln Leu Leu Asp Leu Arg Arg Asn His
            125                 130                 135

Phe Pro Ser Val Pro Arg Ala Ala Phe Pro Gly Leu Gly His Leu
            140                 145                 150

Val Ser Leu His Leu Gln His Cys Gly Ile Ala Glu Leu Glu Ala
            155                 160                 165

Gly Ala Leu Ala Gly Leu Gly Arg Leu Ile Tyr Leu Tyr Leu Ser
            170                 175                 180

Asp Asn Gln Leu Ala Gly Leu Ser Ala Ala Ala Leu Glu Gly Ala
            185                 190                 195

Pro Arg Leu Gly Tyr Leu Tyr Leu Glu Arg Asn Arg Phe Leu Gln
            200                 205                 210

Val Pro Gly Ala Ala Xaa Arg Ala Leu Pro Ser Leu Phe Ser Leu
            215                 220                 225

His Leu Gln Asp Asn Ala Val Asp Arg Leu Ala Pro Gly Asp Leu
            230                 235                 240

Gly Arg Thr Arg Ala Leu Arg Trp Val Tyr Leu Ser Gly Asn Arg
            245                 250                 255

Ile Thr Glu Val Ser Leu Gly Ala Leu Gly Pro Ala Arg Glu Leu
```

80

```
Glu Lys Leu His Leu Asp Arg Asn Gln Leu Arg Glu Val Pro Thr
                275              280              285

Gly Ala Leu Glu Gly Leu Pro Ala Leu Leu Glu Leu Gln Leu Ser
                290              295              300

Gly Asn Pro Leu Arg Ala Leu Arg Asp Gly Ala Phe Gln Pro Val
                305              310              315

Gly Arg Ser Leu Gln His Leu Phe Leu Asn Ser Ser Gly Leu Glu
                320              325              330

Gln Ile Cys Pro Gly Ala Phe Ser Gly Leu Gly Pro Gly Leu Gln
                335              340              345

Ser Leu His Leu Gln Lys Asn Gln Leu Arg Ala Leu Pro Ala Leu
                350              355              360

Pro Ser Leu Ser Gln Leu Glu Leu Ile Asp Leu Ser Ser Asn Pro
                365              370              375

Phe Pro Cys Asp Cys Gln Leu Leu Pro Leu His Arg Trp Leu Thr
                380              385              390

Gly Leu Asn Leu Arg Val Gly Ala Thr Cys Ala Thr Pro Pro Asn
                395              400              405

Ala Arg Gly Gln Arg Val Lys Ala Ala Ala Val Phe Glu Asp
                410              415              420

Cys Pro Gly Trp Ala Ala Arg Lys Ala Lys Arg Thr Pro Ala Ser
                425              430              435

Arg Pro Ser Ala Arg Arg Thr Pro Ile Lys Gly Arg Gln Cys Gly
                440              445              450

Ala Asp Lys Asn Ile Leu Phe Pro Thr Trp Tyr His Thr Val Glu
                455              460              465

Pro Thr Ser Leu Ser
                470
```

```
<210> 59
<211> 2749
<212> DNA
<213> Homosapiens

<220>
<221> unsure
<222> 1869, 1887
<223> unknown base

<400> 59
 ctcccacggt gtccagcgcc cagaatgcgg cttctggtcc tgctatgggg 50

 ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100

 gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150

 ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200
```

```
tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250

agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300

accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggt 350

cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400

caggaccctg ctgtcctccc tccccttctc ccaccttcca gcctctggct 450

acaacacgcc tgcagcccaa ggcaaaagct cagcaaaccc agccccccagg 500

attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550

agacaggggc tgaggcccct ccattgccag ggacttccca gtacgggcac 600

gaaaggactt ctcagtacac aggaacctct cctcacccag cgacctctcc 650

tcctgcaggg agctcccgcc cccccatgca gctggactcc acctcagcag 700

aggacaccag tccagctctc agcagtggca gctctaagcc cagggtgtcc 750

atcccgatgg tccgcatact ggccccagtc ctggtgctgc tgagccttct 800

gtcagccgca ggcctgatcg ccttctgcag ccacctgctc ctgtggagaa 850

aggaagctca acaggccacg gagacacaga ggaacgagaa gttctggctc 900

tcacgcttga ctgcggagga aaaggaagcc ccttcccagg cccctgaggg 950

ggacgtgatc tcgatgcctc ccctccacac atctgaggag gagctgggct 1000

tctcgaagtt tgtctcagcg tagggcagga ggccctcctg gccaggccag 1050

cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100

cacctcagcc tcagagtcca gctgcccgga ctccagggct ctccccaccc 1150

tccccaggct ctcctcttgc atgttccagc ctgacctaga agcgtttgtc 1200

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catccctgat aggttcacat ccctgggcag agtaccaggc tgctgaccct 1300

cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350

aggaactcct gggcctcatg cccagtgtcg gaccctgcct tcctcccact 1400

ccagacccca ccttgtcttc cctccctggc gtcctcagac ttagtcccac 1450

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ggattctggc ttctctttga accacctgca tccagccctt caggaagcct 1550

gtgaaaaacg tgattcctgg ccccaccaag acccaccaaa accatctctg 1600

ggcttggtgc aggactctga attctaacaa tgcccagtga ctgtcgcact 1650

tgagtttgag ggccagtggg cctgatgaac gctcacaccc cttcagctta 1700

gagtctgcat ttgggctgtg acgtctccac ctgccccaat agatctgctc 1750

tgtctgcgac accagatcca cgtggggact cccctgaggc ctgctaagtc 1800
```

82

```
caggccttgg tcaggtcagg tgcacattgc aggataagcc caggaccggc 1850

acagaagtgg ttgcctttnc catttgccct ccctggncca tgccttcttg 1900

cctttggaaa aaatgatgaa gaaaaccttg gctccttcct tgtctggaaa 1950

gggttacttg cctatgggtt ctggtggcta gagagaaaag tagaaaacca 2000

gagtgcacgt aggtgtctaa cacagaggag agtaggaaca gggcggatac 2050

ctgaaggtga ctccgagtcc agcccctgg agaagggtc ggggtggtg 2100

gtaaagtagc acaactacta ttttttttct ttttccatta ttattgtttt 2150

ttaagacaga atctcgtgct gctgcccagg ctggagtgca gtggcacgat 2200

ctgcaaactc cgcctcctgg gttcaagtga ttcttctgcc tcagcctccc 2250

gagtagctgg gattacaggc acgcaccacc acctggct aatttttgta 2300

ctttttagtag agatggggtt tcaccatgtt ggccaggctg gtcttgaact 2350

cctgacctca aatgagcctc ctgcttcagt ctcccaaatt gccgggatta 2400

caggcatgag ccactgtgtc tggccctatt tcctttaaaa agtgaaatta 2450

agagttgttc agtatgcaaa acttggaaag atggaggaga aaagaaaag 2500

gaagaaaaaa atgtcaccca tagtctcacc agagactatc attatttcgt 2550

tttgttgtac ttccttccac tcttttcttc ttcacataat ttgccggtgt 2600

tcttttttaca gagcaattat cttgtatata caactttgta tcctgccttt 2650

tccaccttat cgttccatca ctttattcca gcacttctct gtgttttaca 2700

gaccttttta taaataaaat gttcatcagc tgcataaaaa aaaaaaaaa 2749
```

<210> 60
<211> 332
<212> PRT
<213> Homosapiens

<400> 60

```
Met Arg Leu Leu Val Leu Leu Trp Gly Cys Leu Leu Pro Gly
 1               5               10              15

Tyr Glu Ala Leu Glu Gly Pro Glu Glu Ile Ser Gly Phe Glu Gly
                20              25              30

Asp Thr Val Ser Leu Gln Cys Thr Tyr Arg Glu Glu Leu Arg Asp
                35              40              45

His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
                50              55              60

Cys Ser Gly Thr Ile Tyr Ala Glu Glu Glu Gly Gln Glu Thr Met
                65              70              75

Lys Gly Arg Val Ser Ile Arg Asp Ser Arg Gln Glu Leu Ser Leu
                80              85              90

Ile Val Thr Leu Trp Asn Leu Thr Leu Gln Asp Ala Gly Glu Tyr
```

```
                    95                      100                     105
Trp Cys Gly Val Glu Lys Arg Gly Pro Asp Glu Ser Leu Leu Ile
                    110                     115                     120

Ser Leu Phe Val Phe Pro Gly Pro Cys Cys Pro Pro Ser Pro Ser
                    125                     130                     135

Pro Thr Phe Gln Pro Leu Ala Thr Thr Arg Leu Gln Pro Lys Ala
                    140                     145                     150

Lys Ala Gln Gln Thr Gln Pro Pro Gly Leu Thr Ser Pro Gly Leu
                    155                     160                     165

Tyr Pro Ala Ala Thr Thr Ala Lys Gln Gly Lys Thr Gly Ala Glu
                    170                     175                     180

Ala Pro Pro Leu Pro Gly Thr Ser Gln Tyr Gly His Glu Arg Thr
                    185                     190                     195

Ser Gln Tyr Thr Gly Thr Ser Pro His Pro Ala Thr Ser Pro Pro
                    200                     205                     210

Ala Gly Ser Ser Arg Pro Pro Met Gln Leu Asp Ser Thr Ser Ala
                    215                     220                     225

Glu Asp Thr Ser Pro Ala Leu Ser Ser Gly Ser Ser Lys Pro Arg
                    230                     235                     240

Val Ser Ile Pro Met Val Arg Ile Leu Ala Pro Val Leu Val Leu
                    245                     250                     255

Leu Ser Leu Leu Ser Ala Ala Gly Leu Ile Ala Phe Cys Ser His
                    260                     265                     270

Leu Leu Leu Trp Arg Lys Glu Ala Gln Gln Ala Thr Glu Thr Gln
                    275                     280                     285

Arg Asn Glu Lys Phe Trp Leu Ser Arg Leu Thr Ala Glu Glu Lys
                    290                     295                     300

Glu Ala Pro Ser Gln Ala Pro Glu Gly Asp Val Ile Ser Met Pro
                    305                     310                     315

Pro Leu His Thr Ser Glu Glu Glu Leu Gly Phe Ser Lys Phe Val
                    320                     325                     330

Ser Ala
```

<210> 61
<211> 1572
<212> DNA
<213> Homosapiens

<400> 61
```
cgggccagcc tggggcggcc ggccaggaac cacccgttaa ggtgtcttct 50

ctttagggat ggtgaggttg gaaaaagact cctgtaaccc tcctccagga 100

tgaaccacct gccagaagac atggagaacg ctctcaccgg gagccagagc 150

tcccatgctt ctctgcgcaa tatccattcc atcaacccca cacaactcat 200
```

ggccaggatt gagtcctatg aaggaaggga aaagaaaggc atatctgatg 250

tcaggaggac tttctgtttg tttgtcacct ttgacctctt attcgtaaca 300

ttactgtgga taatagagtt aaatgtgaat ggaggcattg agaacacatt 350

agagaaggag gtgatgcagt atgactacta ttcttcatat tttgatatat 400

ttcttctggc agtttttcga tttaaagtgt taatacttgc atatgctgtg 450

tgcagactgc gccattggtg ggcaatagcg ttgacaacgg cagtgaccag 500

tgcctttta ctagcaaaag tgatcctttc gaagcttttc tctcaagggg 550

cttttggcta tgtgctgccc atcatttcat tcatccttgc ctggattgag 600

acgtggttcc tggatttcaa agtgttacct caagaagcag aagaagaaaa 650

cagactcctg atagttcagg atgcttcaga gagggcagca cttatacctg 700

gtggtctttc tgatggtcag ttttattccc ctcctgaatc cgaagcagga 750

tctgaagaag ctgaagaaaa acaggacagt gagaaaccac ttttagaact 800

atgagtacta cttttgttaa atgtgaaaaa ccctcacaga aagtcatcga 850

ggcaaaaaga ggcaggcagt ggagtctccc tgtcgacagt aaagttgaaa 900

tggtgacgtc cactgctggc tttattgaac agctaataaa gatttattta 950

ttgtaatacc tcacaaacgt tgtaccatat ccatgcacat ttagttgcct 1000

gcctgtggct ggtaaggtaa tgtcatgatt catcctctct tcagtgagac 1050

tgagcctgat gtgttaacaa ataggtgaag aaagtcttgt gctgtattcc 1100

taatcaaaag acttaatata ttgaagtaac acttttttag taagcaagat 1150

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atttattttg tatttctttt ttaacactct acatttccct tgttttttaa 1250

ctcatgcaca tgtgctcttt gtacagtttt aaaaagtgta ataaaatctg 1300

acatgtcaat gtggctagtt ttatttttct tgttttgcat tatgtgtatg 1350

gcctgaagtg ttggacttgc aaaaggggaa gaaaggaatt gcgaatacat 1400

gtaaaatgtc accagacatt tgtattattt ttatcatgaa atcatgtttt 1450

tctctgattg ttctgaaatg ttctaaatac tcttattttg aatgcacaaa 1500

atgacttaaa ccattcatat catgtttcct ttgcgttcag ccaatttcaa 1550

ttaaaatgaa ctaaattaaa aa 1572

<210> 62
<211> 234
<212> PRT
<213> Homosapiens

<400> 62
Met Asn His Leu Pro Glu Asp Met Glu Asn Ala Leu Thr Gly Ser

85

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    1                  5                       10                          15
  Gln Ser Ser His Ala Ser Leu Arg Asn Ile His Ser Ile Asn Pro
                  20                  25                          30

  Thr Gln Leu Met Ala Arg Ile Glu Ser Tyr Glu Gly Arg Glu Lys
                  35                  40                          45

  Lys Gly Ile Ser Asp Val Arg Arg Thr Phe Cys Leu Phe Val Thr
                  50                  55                      .   60

  Phe Asp Leu Leu Phe Val Thr Leu Leu Trp Ile Ile Glu Leu Asn
                  65                  70                          75

  Val Asn Gly Gly Ile Glu Asn Thr Leu Glu Lys Glu Val Met Gln
                  80                  85                          90

  Tyr Asp Tyr Tyr Ser Ser Tyr Phe Asp Ile Phe Leu Leu Ala Val
                  95                  100                         105

  Phe Arg Phe Lys Val Leu Ile Leu Ala Tyr Ala Val Cys Arg Leu
                  110                 115                         120

  Arg His Trp Trp Ala Ile Ala Leu Thr Thr Ala Val Thr Ser Ala
                  125                 130                         135

  Phe Leu Leu Ala Lys Val Ile Leu Ser Lys Leu Phe Ser Gln Gly
                  140                 145                         150

  Ala Phe Gly Tyr Val Leu Pro Ile Ile Ser Phe Ile Leu Ala Trp
                  155                 160                         165

  Ile Glu Thr Trp Phe Leu Asp Phe Lys Val Leu Pro Gln Glu Ala
                  170                 175                         180

  Glu Glu Glu Asn Arg Leu Leu Ile Val Gln Asp Ala Ser Glu Arg
                  185                 190                         195

  Ala Ala Leu Ile Pro Gly Gly Leu Ser Asp Gly Gln Phe Tyr Ser
                  200                 205                         210

  Pro Pro Glu Ser Glu Ala Gly Ser Glu Glu Ala Glu Glu Lys Gln
                  215                 220                         225

  Asp Ser Glu Lys Pro Leu Leu Glu Leu
                  230
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<210> 63
<211> 2458
<212> DNA
<213> Homosapiens

<400> 63

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 cgcccggcac atggctgcag ccacctcgcg cgcaccccga ggcgccgcgc  100

 ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc  150

 agcaactgag cggggaagcg cccgcgtccg gggatcggga tgtccctcct  200

 ccttctcctc ttgctagttt cctactatgt tggaaccttg gggactcaca  250
```

86

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ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300

caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350

cgataatgaa gggaaccaaa aagtggtgat cacttactcc agtcgtcatg 400

tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450

aatttcctgg caggagatgc ctccttgcag attgaacctc tgaagcccag 500

tgatgagggc cggtacacct gtaaggttaa gaattcaggg cgctacgtgt 550

ggagccatgt catcttaaaa gtcttagtga gaccatccaa gcccaagtgt 600

gagttggaag gagagctgac agaaggaagt gacctgactt tgcagtgtga 650

gtcatcctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700

agaaagaggg agaggatgaa cgtctgcctc ccaaatctag gattgactac 750

aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800

actgtaccag tgcacagcag gcaacgaagc tgggaaggaa agctgtgtgg 850

tgcgagtaac tgtacagtat gtacaaagca tcggcatggt tgcaggagca 900

gtgacaggca tagtggctgg agccctgctg attttcctct tggtgtggct 950

gctaatccga aggaaagaca agaaagata tgaggaagaa gagagaccta 1000

atgaaattcg agaagatgct gaagctccaa aagcccgtct tgtgaaaccc 1050

agctcctctt cctcaggctc tcggagctca cgctctggtt cttcctccac 1100

tcgctccaca gcaaatagtg cctcacgcag ccagcggaca ctgtcaactg 1150

acgcagcacc ccagccaggg ctggccaccc aggcatacag cctagtgggg 1200

ccagaggtga gaggttctga accaaagaaa gtccaccatg ctaatctgac 1250

caaagcagaa accacaccca gcatgatccc cagccagagc agagccttcc 1300

aaacggtctg aattacaatg gacttgactc ccacgctttc ctaggagtca 1350

gggtctttgg actcttctcg tcattggagc tcaagtcacc agccacacaa 1400

ccagatgaga ggtcatctaa gtagcagtga gcattgcacg gaacagattc 1450

agatgagcat tttccttata caataccaaa caagcaaaag gatgtaagct 1500

gattcatctg taaaaaggca tcttattgtg cctttagacc agagtaaggg 1550

aaagcaggag tccaaatcta tttgttgacc aggacctgtg gtgagaaggt 1600

tggggaaagg tgaggtgaat atacctaaaa cttttaatgt gggatatttt 1650

gtatcagtgc tttgattcac aattttcaag aggaaatggg atgctgtttg 1700

taaattttct atgcatttct gcaaacttat tggattatta gttattcaga 1750

cagtcaagca gaacccacag ccttattaca cctgtctaca ccatgtactg 1800

agctaaccac ttctaagaaa ctccaaaaaa ggaaacatgt gtcttctatt 1850
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87

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ctgacttaac ttcatttgtc ataaggtttg gatattaatt tcaaggggag 1900

ttgaaatagt gggagatgga gaagagtgaa tgagtttctc ccactctata 1950

ctaatctcac tatttgtatt gagcccaaaa taactatgaa aggagacaaa 2000

aatttgtgac aaaggattgt gaagagcttt ccatcttcat gatgttatga 2050

ggattgttga caaacattag aaatatataa tggagcaatt gtggatttcc 2100

cctcaaatca gatgcctcta aggactttcc tgctagatat ttctggaagg 2150

agaaaataca acatgtcatt tatcaacgtc cttagaaaga attcttctag 2200

agaaaaaggg atctaggaat gctgaaagat tacccaacat accattatag 2250

tctcttcttt ctgagaaaat gtgaaaccag aattgcaaga ctgggtggac 2300

tagaaaggga gattagatca gttttctctt aatatgtcaa ggaaggtagc 2350

cgggcatggt gccaggcacc tgtaggaaaa tccagcaggt ggaggttgca 2400

gtgagccgag attatgccat tgcactccag cctgggtgac agagcgggac 2450

tccgtctc 2458
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<210> 64
<211> 373
<212> PRT
<213> Homosapiens

<400> 64

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Met Ser Leu Leu Leu Leu Leu Leu Leu Val Ser Tyr Tyr Val Gly
  1               5                  10                  15

Thr Leu Gly Thr His Thr Glu Ile Lys Arg Val Ala Glu Glu Lys
             20                  25                  30

Val Thr Leu Pro Cys His His Gln Leu Gly Leu Pro Glu Lys Asp
             35                  40                  45

Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln
             50                  55                  60

Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu
             65                  70                  75

Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu
             80                  85                  90

Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp
             95                 100                 105

Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val
             110                 115                 120

Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro
             125                 130                 135

Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
             140                 145                 150

Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
```

Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro
            170                      175                      180

Pro Lys Ser Arg Ile Asp Tyr Asn His Pro Gly Arg Val Leu Leu
            185                      190                      195

Gln Asn Leu Thr Met Ser Tyr Ser Gly Leu Tyr Gln Cys Thr Ala
            200                      205                      210

Gly Asn Glu Ala Gly Lys Glu Ser Cys Val Val Arg Val Thr Val
            215                      220                      225

Gln Tyr Val Gln Ser Ile Gly Met Val Ala Gly Ala Val Thr Gly
            230                      235                      240

Ile Val Ala Gly Ala Leu Leu Ile Phe Leu Leu Val Trp Leu Leu
            245                      250                      255

Ile Arg Arg Lys Asp Lys Glu Arg Tyr Glu Glu Glu Glu Arg Pro
            260                      265                      270

Asn Glu Ile Arg Glu Asp Ala Glu Ala Pro Lys Ala Arg Leu Val
            275                      280                      285

Lys Pro Ser Ser Ser Ser Ser Gly Ser Arg Ser Ser Arg Ser Gly
            290                      295                      300

Ser Ser Ser Thr Arg Ser Thr Ala Asn Ser Ala Ser Arg Ser Gln
            305                      310                      315

Arg Thr Leu Ser Thr Asp Ala Ala Pro Gln Pro Gly Leu Ala Thr
            320                      325                      330

Gln Ala Tyr Ser Leu Val Gly Pro Glu Val Arg Gly Ser Glu Pro
            335                      340                      345

Lys Lys Val His His Ala Asn Leu Thr Lys Ala Glu Thr Thr Pro
            350                      355                      360

Ser Met Ile Pro Ser Gln Ser Arg Ala Phe Gln Thr Val
            365                      370

<210> 65
<211> 1728
<212> DNA
<213> Homosapiens

<400> 65
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 tgcagttcct agcgaggagg cgccgccgcc attgccgctc tctcggtgag 100

 cgcagccccg ctctccgggc cgggccttcg cgggccaccg gcgccatggg 150

 ccagtgcggc atcacctcct ccaagaccgt gctggtcttt ctcaacctca 200

 tcttctgggg ggcagctggc attttatgct atgtgggagc ctatgtcttc 250

 atcacttatg atgactatga ccacttcttt gaagatgtgt acacgctcat 300

 ccctgctgta gtgatcatag ctgtaggagc cctgcttttc atcattgggc 350

89

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taattggctg ctgtgccaca atccgggaaa gtcgctgtgg acttgccacg 400

tttgtcatca tcctgctctt ggttttttgtc acagaagttg ttgtagtggt 450

tttgggatat gtttacagag caaaggtgga aaatgaggtt gatcgcagca 500

ttcagaaagt gtataagacc tacaatggaa ccaaccctga tgctgctagc 550

cgggctattg attatgtaca gagacagctg cattgttgtg gaattcacaa 600

ctactcagac tgggaaaata cagattggtt caaagaaacc aaaaaccaga 650

gtgtccctct tagctgctgc agagagactg ccagcaattg taatggcagc 700

ctggcccacc cttccgacct ctatgctgag gggtgtgagg ctctagtagt 750

gaagaagcta caagaaatca tgatgcatgt gatctgggcc gcactggcat 800

ttgcagctat tcagctgctg ggcatgctgt gtgcttgcat cgtgttgtgc 850

agaaggagta gagatcctgc ttacgagctc ctcatcactg gcggaaccta 900

tgcatagttg acaactcaag cctgagcttt ttggtcttgt tctgatttgg 950

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actcttcatg cccctaagat tttaagtacg atggtgaacg ttctaatttc 1150

agaaccaatt gcgagtcatg tagtgtggta gaattaaagg aggacacgag 1200

cctgcttctg ttacctccaa gtggtaacag gactgatgcc gaaatgtcac 1250

caggtccttt cagtcttcac agtggagaac tcttggccaa aggttttttgc 1300

ggggaggagg aggaaaccag ctttctggtt aaggttaaca ccagatggtg 1350

cccctcattg gtgtccttttt aaaaaatatt tactgtagtc aataagata 1400

gcagctgtac aaaatgacta aaatagattg taggatcata tggcgtatat 1450

cttggttcat cttcaaaatc agagactgag ctttgaaact agtggttttt 1500

aatcaaagtt ggctttatag gaggagtata atgtatgcac tactgtttta 1550

aaagaattag tgtgagtgtg tttttgtatg aatgagccca ttcatggtaa 1600

gtcttaagct tgttggaaat aatgtaccca tgtagactag caaaatagta 1650

tgtagatgtg atctcagttg taaatagaaa aatctaattc aataaactct 1700

gtatcagccc ccaaaaaaaa aaaaaaaa 1728
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&lt;210&gt; 66
&lt;211&gt; 253
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 66
Met Gly Gln Cys Gly Ile Thr Ser Ser Lys Thr Val Leu Val Phe

```
          1                    5                        10                          15
        Leu Asn Leu Ile Phe Trp Gly Ala Ala Gly Ile Leu Cys Tyr Val
                        20                      25                          30

        Gly Ala Tyr Val Phe Ile Thr Tyr Asp Asp Tyr Asp His Phe Phe
                        35                      40                          45

        Glu Asp Val Tyr Thr Leu Ile Pro Ala Val Val Ile Ile Ala Val
                        50                      55                          60

        Gly Ala Leu Leu Phe Ile Ile Gly Leu Ile Gly Cys Cys Ala Thr
                        65              .       70                          75

        Ile Arg Glu Ser Arg Cys Gly Leu Ala Thr Phe Val Ile Ile Leu
                        80                      85                          90

        Leu Leu Val Phe Val Thr Glu Val Val Val Val Leu Gly Tyr
                        95                      100                         105

        Val Tyr Arg Ala Lys Val Glu Asn Glu Val Asp Arg Ser Ile Gln
                        110                     115                         120

        Lys Val Tyr Lys Thr Tyr Asn Gly Thr Asn Pro Asp Ala Ala Ser
                        125                     130                         135

        Arg Ala Ile Asp Tyr Val Gln Arg Gln Leu His Cys Cys Gly Ile
                        140                     145                         150

        His Asn Tyr Ser Asp Trp Glu Asn Thr Asp Trp Phe Lys Glu Thr
                        155                     160                         165

        Lys Asn Gln Ser Val Pro Leu Ser Cys Cys Arg Glu Thr Ala Ser
                        170                     175                         180

        Asn Cys Asn Gly Ser Leu Ala His Pro Ser Asp Leu Tyr Ala Glu
                        185                     190                         195

        Gly Cys Glu Ala Leu Val Val Lys Lys Leu Gln Glu Ile Met Met
                        200                     205                         210

        His Val Ile Trp Ala Ala Leu Ala Phe Ala Ala Ile Gln Leu Leu
                        215                     220                         225

        Gly Met Leu Cys Ala Cys Ile Val Leu Cys Arg Arg Ser Arg Asp
                        230                     235                         240

        Pro Ala Tyr Glu Leu Leu Ile Thr Gly Gly Thr Tyr Ala
                        245                     250
```

<210> 67
<211> 963
<212> DNA
<213> Homosapiens

<400> 67
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 gcggcacctg gaagatgcgc ccattggctg gtggcctgct caaggtggtg 50

 ttcgtggtct tcgcctcctt gtgtgcctgg tattcggggt acctgctcgc 100

 agagctcatt ccagatgcac ccctgtccag tgctgcctat agcatccgca 150

 gcatcgggga gaggcctgtc ctcaaagctc cagtccccaa aaggcaaaaa 200
```

```
tgtgaccact ggactccctg cccatctgac acctatgcct acaggttact 250

cagcggaggt ggcagaagca agtacgccaa aatctgcttt gaggataacc 300

tacttatggg agaacagctg ggaaatgttg ccagaggaat aaacattgcc 350

attgtcaact atgtaactgg gaatgtgaca gcaacacgat gttttgatat 400

gtatgaaggc gataactctg gaccgatgac aaagtttatt cagagtgctg 450

ctccaaaatc cctgctcttc atggtgacct atgacgacgg aagcacaaga 500

ctgaataacg atgccaagaa tgccatagaa gcacttggaa gtaaagaaat 550

caggaacatg aaattcaggt ctagctgggt atttattgca gcaaaaggct 600

tggaactccc ttccgaaatt cagagagaaa agatcaacca ctctgatgct 650

aagaacaaca gatattctgg ctggcctgca gagatccaga tagaaggctg 700

catacccaaa gaacgaagct gacactgcag ggtcctgagt aaatgtgttc 750

tgtataaaca aatgcagctg gaatcgctca agaatcttat ttttctaaat 800

ccaacagccc atatttgatg agtattttgg gtttgttgta aaccaatgaa 850

catttgctag ttgtatcaaa tcttggtacg cagtattttt ataccagtat 900

tttatgtagt gaagatgtca attagcagga aactaaaatg aatggaaatt 950

cttaaaaaaa aaa 963
```

<210> 68
<211> 235
<212> PRT
<213> Homosapiens

<400> 68

```
Met Arg Pro Leu Ala Gly Gly Leu Leu Lys Val Val Phe Val Val
 1               5                  10                  15

Phe Ala Ser Leu Cys Ala Trp Tyr Ser Gly Tyr Leu Leu Ala Glu
                20                  25                  30

Leu Ile Pro Asp Ala Pro Leu Ser Ser Ala Ala Tyr Ser Ile Arg
                35                  40                  45

Ser Ile Gly Glu Arg Pro Val Leu Lys Ala Pro Val Pro Lys Arg
                50                  55                  60

Gln Lys Cys Asp His Trp Thr Pro Cys Pro Ser Asp Thr Tyr Ala
                65                  70                  75

Tyr Arg Leu Leu Ser Gly Gly Gly Arg Ser Lys Tyr Ala Lys Ile
                80                  85                  90

Cys Phe Glu Asp Asn Leu Leu Met Gly Glu Gln Leu Gly Asn Val
                95                  100                 105

Ala Arg Gly Ile Asn Ile Ala Ile Val Asn Tyr Val Thr Gly Asn
                110                 115                 120

Val Thr Ala Thr Arg Cys Phe Asp Met Tyr Glu Gly Asp Asn Ser
```

```
                125                      130                      135
    Gly Pro Met Thr Lys Phe Ile Gln Ser Ala Ala Pro Lys Ser Leu
                    140                 145                 150
    Leu Phe Met Val Thr Tyr Asp Asp Gly Ser Thr Arg Leu Asn Asn
                    155                 160                 165
    Asp Ala Lys Asn Ala Ile Glu Ala Leu Gly Ser Lys Glu Ile Arg
                    170                 175                 180
    Asn Met Lys Phe Arg Ser Ser Trp Val Phe Ile Ala Ala Lys Gly
                    185                 190                 195
    Leu Glu Leu Pro Ser Glu Ile Gln Arg Glu Lys Ile Asn His Ser
                    200                 205                 210
    Asp Ala Lys Asn Asn Arg Tyr Ser Gly Trp Pro Ala Glu Ile Gln
                    215                 220                 225
    Ile Glu Gly Cys Ile Pro Lys Glu Arg Ser
                    230                 235
```

<210> 69
<211> 1091
<212> DNA
<213> Homosapiens

<400> 69

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acacaacttt acacctgaat gaacgccaaa cctctatgga tatataaagg 50

gaagcttgag gaggaatttc acagttacag tgcagaagca gaagcaaaag 100

aattaaccag ctcttcagtc aagcaaatcc tctactcacc atgcttcctc 150

ctgccattca tttctatctc cttccccttg catgcatcct aatgaaaagc 200

tgtttggctt ttaaaaatga tgccacagaa atcctttatt cacatgtggt 250

taaacctgtt ccagcacacc ccagcagcaa cagcacgttg aatcaagcca 300

gaaatggagg caggcatttc agtaacactg gactggatcg gaacactcgg 350

gttcaagtgg gttgccggga actgcgttcc accaaataca tctctgatgg 400

ccagtgcacc agcatcagcc ctctgaagga gctggtgtgt gctggcgagt 450

gcttgcccct gccagtgctc cctaactgga ttggaggagg ctatggaaca 500

aagtactgga gcaggaggag ctcccaggag tggcggtgtg tcaatgacaa 550

aacccgtacc cagagaatcc agctgcagtg ccaagatggc agcacacgca 600

cctacaaaat cacagtagtc actgcctgca gtgcaagag gtacacccgg 650

cagcacaacg agtccagtca caactttgag agcatgtcac ctgccaagcc 700

agtccagcat cacagagagc ggaaaagagc cagcaaatcc agcaagcaca 750

gcatgagtta gaactcagac tcccataact agacttacta gtaaccatct 800

gctttacaga tttgattgct tggaagactc aagcctgcca ctgctgtttt 850
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ctcacttgaa agtatatgct ttctgctttg atcaaaccca gcaagctgtc 900

ttaagtatca ggaccttctt tgggaatagt ttttcctttt aaagtttttc 950

aagatgtagg tatatccatg aatgcaattt gcatttaaat tccacgtatc 1000

cctgtagttt aaattcctca ttggtcttaa aagactgttg atactataaa 1050

catcagtgga atcaattata ttttaaaaca gaaaagggct t 1091
```

<210> 70
<211> 206
<212> PRT
<213> Homosapiens

<400> 70

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Met | Leu | Pro | Pro | Ala | Ile | His | Phe | Tyr | Leu | Leu | Pro | Leu | Ala | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

Ile Leu Met Lys Ser Cys Leu Ala Phe Lys Asn Asp Ala Thr Glu
            20              25              30

Ile Leu Tyr Ser His Val Val Lys Pro Val Pro Ala His Pro Ser
            35              40              45

Ser Asn Ser Thr Leu Asn Gln Ala Arg Asn Gly Gly Arg His Phe
            50              55              60

Ser Asn Thr Gly Leu Asp Arg Asn Thr Arg Val Gln Val Gly Cys
            65              70              75

Arg Glu Leu Arg Ser Thr Lys Tyr Ile Ser Asp Gly Gln Cys Thr
            80              85              90

Ser Ile Ser Pro Leu Lys Glu Leu Val Cys Ala Gly Glu Cys Leu
            95              100             105

Pro Leu Pro Val Leu Pro Asn Trp Ile Gly Gly Gly Tyr Gly Thr
            110             115             120

Lys Tyr Trp Ser Arg Arg Ser Ser Gln Glu Trp Arg Cys Val Asn
            125             130             135

Asp Lys Thr Arg Thr Gln Arg Ile Gln Leu Gln Cys Gln Asp Gly
            140             145             150

Ser Thr Arg Thr Tyr Lys Ile Thr Val Val Thr Ala Cys Lys Cys
            155             160             165

Lys Arg Tyr Thr Arg Gln His Asn Glu Ser Ser His Asn Phe Glu
            170             175             180

Ser Met Ser Pro Ala Lys Pro Val Gln His His Arg Glu Arg Lys
            185             190             195

Arg Ala Ser Lys Ser Ser Lys His Ser Met Ser
            200             205

<210> 71
<211> 999
<212> DNA
<213> Homosapiens

<400> 71
cccaggctct agtgcaggag gagaaggagg aggagcagga ggtggagatt 50

cccagttaaa aggctccaga atcgtgtacc aggcagagaa ctgaagtact 100

ggggcctcct ccactgggtc cgaatcagta ggtgaccccg cccctggatt 150

ctggaagacc tcaccatggg acgcccccga cctcgtgcgg ccaagacgtg 200

gatgttcctg ctcttgctgg ggggagcctg ggcaggacac tccagggcac 250

aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct 300

tggcaggcgg ccttgttcca gggccagcaa ctactctgtg gcggtgtcct 350

tgtaggtggc aactgggtcc ttacagctgc ccactgtaaa aaccgaaat 400

acacagtacg cctgggagac cacagcctac agaataaaga tggcccagag 450

caagaaatac ctgtggttca gtccatccca caccctgct acaacagcag 500

cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550

aggcatccct ggggtccaaa gtgaagccca tcagcctggc agatcattgc 600

acccagcctg gccagaagtg caccgtctca ggctggggca ctgtcaccag 650

tccccgagag aattttcctg acactctcaa ctgtgcagaa gtaaaaatct 700

ttccccagaa gaagtgtgag gatgcttacc cggggcagat cacagatggc 750

atggtctgtg caggcagcag caaagggggct gacacgtgcc aggcgattc 800

tggaggcccc ctggtgtgtg atggtgcact ccagggcatc acatcctggg 850

gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900

tgccgctacc tggactggat caagaagatc ataggcagca agggctgatt 950

ctaggataag cactagatct cccttaataa actcacaact ctctggttc 999

<210> 72
<211> 260
<212> PRT
<213> Homosapiens

<400> 72
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Met Gly Arg Pro Arg Pro Arg Ala Ala Lys Thr Trp Met Phe Leu
 1               5                  10                  15

Leu Leu Leu Gly Gly Ala Trp Ala Gly His Ser Arg Ala Gln Glu
                20                  25                  30

Asp Lys Val Leu Gly Gly His Glu Cys Gln Pro His Ser Gln Pro
                35                  40                  45

Trp Gln Ala Ala Leu Phe Gln Gly Gln Gln Leu Leu Cys Gly Gly
                50                  55                  60

Val Leu Val Gly Gly Asn Trp Val Leu Thr Ala Ala His Cys Lys
                65                  70                  75

Lys Pro Lys Tyr Thr Val Arg Leu Gly Asp His Ser Leu Gln Asn
```

```
Lys Asp Gly Pro Glu Gln Glu Ile Pro Val Val Gln Ser Ile Pro
                95                  100                 105

His Pro Cys Tyr Asn Ser Ser Asp Val Glu Asp His Asn His Asp
                110                 115                 120

Leu Met Leu Leu Gln Leu Arg Asp Gln Ala Ser Leu Gly Ser Lys
                125                 130                 135

Val Lys Pro Ile Ser Leu Ala Asp His Cys Thr Gln Pro Gly Gln
                140                 145                 150

Lys Cys Thr Val Ser Gly Trp Gly Thr Val Thr Ser Pro Arg Glu
                155                 160                 165

Asn Phe Pro Asp Thr Leu Asn Cys Ala Glu Val Lys Ile Phe Pro
                170                 175                 180

Gln Lys Lys Cys Glu Asp Ala Tyr Pro Gly Gln Ile Thr Asp Gly
                185                 190                 195

Met Val Cys Ala Gly Ser Ser Lys Gly Ala Asp Thr Cys Gln Gly
                200                 205                 210

Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Ala Leu Gln Gly Ile
                215                 220                 225

Thr Ser Trp Gly Ser Asp Pro Cys Gly Arg Ser Asp Lys Pro Gly
                230                 235                 240

Val Tyr Thr Asn Ile Cys Arg Tyr Leu Asp Trp Ile Lys Lys Ile
                245                 250                 255

Ile Gly Ser Lys Gly
                260
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<210> 73
<211> 3906
<212> DNA
<213> Homosapiens
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<400> 73
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 gcggccggcg ccggcctctc caatggcaaa tgtgtgtggc tggaggcgag 100

 cgcgaggctt tcggcaaagg cagtcgagtg tttgcagacc ggggcgagtc 150

 ctgtgaaagc agataaaaga aaacatttat taacgtgtca ttacgagggg 200

 agcgcccggc cggggctgtc gcactccccg cggaacattt ggctccctcc 250

 agctccgaga gaggagaaga agaaagcgga aaagaggcag attcacgtcg 300

 tttccagcca agtggacctg atcgatggcc tcctgaatt tatcacgata 350

 tttgatttat tagcgatgcc ccctggtttg tgtgttacgc acacacacgt 400

 gcacacaagg ctctggctcg cttccctccc tcgtttccag ctcctgggcg 450

 aatcccacat ctgtttcaac tctccgccga gggcgagcag gagcgagagt 500
```

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gtgtcgaatc tgcgagtgaa gagggacgag ggaaaagaaa caaagccaca  550

gacgcaactt gagactcccg catcccaaaa gaagcaccag atcagcaaaa  600

aaagaagatg ggcccccga gcctcgtgct gtgcttgctg tccgcaactg  650

tgttctccct gctgggtgga agctcggcct tcctgtcgca ccaccgcctg  700

aaaggcaggt ttcagaggga ccgcaggaac atccgcccca acatcatcct  750

ggtgctgacg gacgaccagg atgtggagct gggttccatg caggtgatga  800

acaagacccg gcgcatcatg gagcagggcg gggcgcactt catcaacgcc  850

ttcgtgacca cacccatgtg ctgcccctca cgctcctcca tcctcactgg  900

caagtacgtc cacaaccaca acacctacac caacaatgag aactgctcct  950

cgccctcctg gcaggcacag cacgagagcc gcacctttgc cgtgtacctc  1000

aatagcactg gctaccggac agctttcttc gggaagtatc ttaatgaata  1050

caacggctcc tacgtgccac ccggctggaa ggagtgggtc ggactcctta  1100

aaaactcccg cttttataac tacacgctgt gtcggaacgg ggtgaaagag  1150

aagcacggct ccgactactc caaggattac ctcacagacc tcatcaccaa  1200

tgacagcgtg agcttcttcc gcacgtccaa gaagatgtac ccgcacaggc  1250

cagtcctcat ggtcatcagc catgcagccc cccacggccc tgaggattca  1300

gccccacaat attcacgcct cttcccaaac gcatctcagc acatcacgcc  1350

gagctacaac tacgcgccca acccggacaa acactggatc atgcgctaca  1400

cggggcccat gaagcccatc cacatggaat tcaccaacat gctccagcgg  1450

aagcgcttgc agaccctcat gtcggtggac gactccatgg agacgattta  1500

caacatgctg gttgagacgg gcgagctgga caacacgtac atcgtataca  1550

ccgccgacca cggttaccac atcggccagt ttggcctggt gaaagggaaa  1600

tccatgccat atgagtttga catcagggtc ccgttctacg tgaggggccc  1650

caacgtggaa gccggctgtc tgaatcccca catcgtcctc aacattgacc  1700

tggccccac catcctggac attgcaggcc tggacatacc tgcggatatg  1750

gacgggaaat ccatcctcaa gctgctggac acggagcggc cggtgaatcg  1800

gtttcacttg aaaaagaaga tgagggtctg gcgggactcc ttcttggtgg  1850

agagaggcaa gctgctacac aagagagaca atgacaaggt ggacgcccag  1900

gaggagaact ttctgcccaa gtaccagcgt gtgaaggacc tgtgtcagcg  1950

tgctgagtac cagacggcgt gtgagcagct gggacagaag tggcagtgtg  2000

tggaggacgc cacggggaag ctgaagctgc ataagtgcaa gggcccatg  2050

cggctgggcg gcagcagagc cctctccaac ctcgtgccca agtactacgg  2100
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97

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tggccggacg ccggaaaaaa ctcttcaaga agaagtacaa ggccagctat 2200

gtccgcagtc gctccatccg ctcagtggcc atcgaggtgg acggcagggt 2250

gtaccacgta ggcctgggtg atgccgccca gccccgaaac ctcaccaagc 2300

ggcactggcc aggggcccct gaggaccaag atgacaagga tggtggggac 2350

ttcagtggca ctggaggcct tcccgactac tcagccgcca accccattaa 2400

agtgacacat cggtgctaca tcctagagaa cgacacagtc cagtgtgacc 2450

tggacctgta caagtccctg caggcctgga aagaccacaa gctgcacatc 2500

gaccacgaga ttgaaaccct gcagaacaaa attaagaacc tgagggaagt 2550

ccgaggtcac ctgaagaaaa agcggccaga agaatgtgac tgtcacaaaa 2600

tcagctacca cacccagcac aaaggccgcc tcaagcacag aggctccagt 2650

ctgcatcctt tcaggaaggg cctgcaagag aaggacaagg tgtggctgtt 2700

gcgggagcag aagcgcaaga agaaactccg caagctgctc aagcgcctgc 2750

agaacaacga cacgtgcagc atgccaggcc tcacgtgctt cacccacgac 2800

aaccagcact ggcagacggc gcctttctgg acactggggc ctttctgtgc 2850

ctgcaccagc gccaacaata cacgtactg gtgcatgagg accatcaatg 2900

agactcacaa tttcctcttc tgtgaatttg caactggctt cctagagtac 2950

tttgatctca acacagaccc ctaccagctg atgaatgcag tgaacacact 3000

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gctgcaaggg ttacaagcag tgtaaccccc ggactcgaaa catggacctg 3100

gatggaggaa gctatgagca atacaggcag tttcagcgtc gaaagtggcc 3150

agaaatgaag agaccttctt ccaaatcact gggacaactg tgggaaggct 3200

gggaaggtta agaaacaaca gaggtggacc tccaaaaaca tagaggcatc 3250

acctgactgc acaggcaatg aaaaaccatg tgggtgattt ccagcagacc 3300

tgtgctattg gccaggaggc ctgagaaagc aagcacgcac tctcagtcaa 3350

catgacagat tctggaggat aaccagcagg agcagagata acttcaggaa 3400

gtccattttt gccctgctt ttgctttgga ttatacctca ccagctgcac 3450

aaaatgcatt ttttcgtatc aaaaagtcac cactaaccct cccccagaag 3500

ctcacaaagg aaaacggaga gagcgagcga gagagatttc cttggaaatt 3550

tctcccaagg gcgaaagtca ttggaatttt taaatcatag gggaaaagca 3600

gtcctgttct aaatcctctt attcttttgg tttgtcacaa agaaggaact 3650

aagaagcagg acagaggcaa cgtggagagg ctgaaaacag tgcagagacg 3700
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98

tttgacaatg agtcagtagc acaaaagaga tgacatttac ctagcactat 3750

aaaccctggt tgcctctgaa gaaactgcct tcattgtata tatgtgacta 3800

tttacatgta atcaacatgg gaacttttag gggaacctaa taagaaatcc 3850

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gaaaaa 3906

<210> 74
<211> 867
<212> PRT
<213> Homosapiens

<400> 74

```
Met Gly Pro Pro Ser Leu Val Leu Cys Leu Leu Ser Ala Thr Val
 1               5                  10                  15

Phe Ser Leu Leu Gly Gly Ser Ser Ala Phe Leu Ser His His Arg
                20                  25                  30

Leu Lys Gly Arg Phe Gln Arg Asp Arg Arg Asn Ile Arg Pro Asn
                35                  40                  45

Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser
                50                  55                  60

Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly
                65                  70                  75

Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro
                80                  85                  90

Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn
                95                  100                 105

Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala
                110                 115                 120

Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
                125                 130                 135

Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
                140                 145                 150

Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Leu Lys
                155                 160                 165

Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys
                170                 175                 180

Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu
                185                 190                 195

Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met
                200                 205                 210

Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala Pro
                215                 220                 225

His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro
                230                 235                 240
```

99

```
Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn
                245                 250                 255

Pro Asp Lys His Trp Ile Met Arg Tyr Thr Gly Pro Met Lys Pro
                260                 265                 270

Ile His Met Glu Phe Thr Asn Met Leu Gln Arg Lys Arg Leu Gln
                275                 280                 285

Thr Leu Met Ser Val Asp Asp Ser Met Glu Thr Ile Tyr Asn Met
                290                 295                 300

Leu Val Glu Thr Gly Glu Leu Asp Asn Thr Tyr Ile Val Tyr Thr
                305                 310                 315

Ala Asp His Gly Tyr His Ile Gly Gln Phe Gly Leu Val Lys Gly
                320                 325                 330

Lys Ser Met Pro Tyr Glu Phe Asp Ile Arg Val Pro Phe Tyr Val
                335                 340                 345

Arg Gly Pro Asn Val Glu Ala Gly Cys Leu Asn Pro His Ile Val
                350                 355                 360

Leu Asn Ile Asp Leu Ala Pro Thr Ile Leu Asp Ile Ala Gly Leu
                365                 370                 375

Asp Ile Pro Ala Asp Met Asp Gly Lys Ser Ile Leu Lys Leu Leu
                380                 385                 390

Asp Thr Glu Arg Pro Val Asn Arg Phe His Leu Lys Lys Lys Met
                395                 400                 405

Arg Val Trp Arg Asp Ser Phe Leu Val Glu Arg Gly Lys Leu Leu
                410                 415                 420

His Lys Arg Asp Asn Asp Lys Val Asp Ala Gln Glu Glu Asn Phe
                425                 430                 435

Leu Pro Lys Tyr Gln Arg Val Lys Asp Leu Cys Gln Arg Ala Glu
                440                 445                 450

Tyr Gln Thr Ala Cys Glu Gln Leu Gly Gln Lys Trp Gln Cys Val
                455                 460                 465

Glu Asp Ala Thr Gly Lys Leu Lys Leu His Lys Cys Lys Gly Pro
                470                 475                 480

Met Arg Leu Gly Gly Ser Arg Ala Leu Ser Asn Leu Val Pro Lys
                485                 490                 495

Tyr Tyr Gly Gln Gly Ser Glu Ala Cys Thr Cys Asp Ser Gly Asp
                500                 505                 510

Tyr Lys Leu Ser Leu Ala Gly Arg Arg Lys Lys Leu Phe Lys Lys
                515                 520                 525

Lys Tyr Lys Ala Ser Tyr Val Arg Ser Arg Ser Ile Arg Ser Val
                530                 535                 540

Ala Ile Glu Val Asp Gly Arg Val Tyr His Val Gly Leu Gly Asp
                545                 550                 555
```

```
Ala Ala Gln Pro Arg Asn Leu Thr Lys Arg His Trp Pro Gly Ala
                560                 565                 570

Pro Glu Asp Gln Asp Asp Lys Asp Gly Gly Asp Phe Ser Gly Thr
                575             580                     585

Gly Gly Leu Pro Asp Tyr Ser Ala Ala Asn Pro Ile Lys Val Thr
                590                 595                     600

His Arg Cys Tyr Ile Leu Glu Asn Asp Thr Val Gln Cys Asp Leu
                605                 610                     615

Asp Leu Tyr Lys Ser Leu Gln Ala Trp Lys Asp His Lys Leu His
                620                 625                     630

Ile Asp His Glu Ile Glu Thr Leu Gln Asn Lys Ile Lys Asn Leu
                635                 640                     645

Arg Glu Val Arg Gly His Leu Lys Lys Lys Arg Pro Glu Glu Cys
                650                 655                     660

Asp Cys His Lys Ile Ser Tyr His Thr Gln His Lys Gly Arg Leu
                665                 670                     675

Lys His Arg Gly Ser Ser Leu His Pro Phe Arg Lys Gly Leu Gln
                680                 685                     690

Glu Lys Asp Lys Val Trp Leu Leu Arg Glu Gln Lys Arg Lys Lys
                695                 700                     705

Lys Leu Arg Lys Leu Leu Lys Arg Leu Gln Asn Asn Asp Thr Cys
                710                 715                     720

Ser Met Pro Gly Leu Thr Cys Phe Thr His Asp Asn Gln His Trp
                725                 730                     735

Gln Thr Ala Pro Phe Trp Thr Leu Gly Pro Phe Cys Ala Cys Thr
                740                 745                     750

Ser Ala Asn Asn Asn Thr Tyr Trp Cys Met Arg Thr Ile Asn Glu
                755                 760                     765

Thr His Asn Phe Leu Phe Cys Glu Phe Ala Thr Gly Phe Leu Glu
                770                 775                     780

Tyr Phe Asp Leu Asn Thr Asp Pro Tyr Gln Leu Met Asn Ala Val
                785                 790                     795

Asn Thr Leu Asp Arg Asp Val Leu Asn Gln Leu His Val Gln Leu
                800                 805                     810

Met Glu Leu Arg Ser Cys Lys Gly Tyr Lys Gln Cys Asn Pro Arg
                815                 820                     825

Thr Arg Asn Met Asp Leu Asp Gly Gly Ser Tyr Glu Gln Tyr Arg
                830                 835                     840

Gln Phe Gln Arg Arg Lys Trp Pro Glu Met Lys Arg Pro Ser Ser
                845                 850                     855

Lys Ser Leu Gly Gln Leu Trp Glu Gly Trp Glu Gly
                860                 865
```

<210> 75
<211> 1427
<212> DNA
<213> Homosapiens

<400> 75
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agaaccagat gatattattt ttccaactga ttctgatgaa aagaaggtag 100

cattgaattg tgaagttcgt ggcaatccag ttcccagtta cagatggctt 150

cgaaatggaa cagaaataga tctggaaagt gattatcgct acagtttgat 200

agatggcacc ttcattataa gcaatccaag tgaagcaaag gattctggtc 250

attatcagtg tttagcaacc aacactgtgg ggagtattct tagtagagaa 300

gctacactgc agtttgccta tctgggaaat tttagtggcc ggacaagaag 350

tgcagtctct gtgagggaag gccagggtgt cgttctgatg tgctctcctc 400

cgccacattc accagagatc atctatagct gggtatttaa tgagttccct 450

tcctttgtgg cggaagacag ccggcggttc atctcccagg agacaggcaa 500

cctttatatt tctaaagtcc aaacatcaga tgttggcagc tatatttgtc 550

tggtgaaaaa cacagtgacg aatgctagag tccttagtcc tccaacgcca 600

ctcactctgc gtaatgatgg tgtgatggga gaatatgagc cgaaaattga 650

ggtccatttt cctttcacgg ttacagctgc taaaggaaca actgttaaga 700

tggaatgctt tgcacttggc aaccccgttc aacaatcac atggatgaag 750

gttaatggtt atattcctag taaggcacgt ctgcggaaat ctcaggcggt 800

gctggaaata ccgaatgtac agctggatga tgcaggcatt tatgagtgca 850

gagctgaaaa ctcacgtgga aaaaattcct ttcgtggaca attacaagta 900

tacacctacc cacactgggt agaaaaactg aatgatactc agttagacag 950

tgggagccct ctccgatggg aatgtaaggc tactggaaaa cccagaccca 1000

cgtatcgttg gctgaagaat ggagtacccc tctcacctca gagtagggtt 1050

gagatggtta atggagtatt gatgatccac aatgtgaatc aatcagatgc 1100

tggaatgtat cagtgtttgg ctgaaaataa gtatggagcc atttacgcta 1150

gtgctgagct gaagattcta gcttcagctc ccacttttgc actgaatcaa 1200

ctgaagaaaa caataattgt taccaaagac caagaagttg tcatagagtg 1250

caaaccccaa ggctctccaa aaccaaccat ctcttggaag aaaggagaca 1300

gagcagttag agaaaacaaa agaatagcta ttcttccaga cgggagtcta 1350

cggatcctaa atgcttccaa atcagacgag ggaaagtacg tttgccgagg 1400

ggaaaacgtc tttggttctg ctgaaat 1427

102

<210> 76
<211> 346
<212> PRT
<213> Homosapiens

<400> 76

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Met Cys Ser Pro Pro Pro His Ser Pro Glu Ile Ile Tyr Ser Trp
  1               5                  10                  15

Val Phe Asn Glu Phe Pro Ser Phe Val Ala Glu Asp Ser Arg Arg
               20                  25                  30

Phe Ile Ser Gln Glu Thr Gly Asn Leu Tyr Ile Ser Lys Val Gln
               35                  40                  45

Thr Ser Asp Val Gly Ser Tyr Ile Cys Leu Val Lys Asn Thr Val
               50                  55                  60

Thr Asn Ala Arg Val Leu Ser Pro Pro Thr Pro Leu Thr Leu Arg
               65                  70                  75

Asn Asp Gly Val Met Gly Glu Tyr Glu Pro Lys Ile Glu Val His
               80                  85                  90

Phe Pro Phe Thr Val Thr Ala Ala Lys Gly Thr Thr Val Lys Met
               95                 100                 105

Glu Cys Phe Ala Leu Gly Asn Pro Val Pro Thr Ile Thr Trp Met
              110                 115                 120

Lys Val Asn Gly Tyr Ile Pro Ser Lys Ala Arg Leu Arg Lys Ser
              125                 130                 135

Gln Ala Val Leu Glu Ile Pro Asn Val Gln Leu Asp Asp Ala Gly
              140                 145                 150

Ile Tyr Glu Cys Arg Ala Glu Asn Ser Arg Gly Lys Asn Ser Phe
              155                 160                 165

Arg Gly Gln Leu Gln Val Tyr Thr Tyr Pro His Trp Val Glu Lys
              170                 175                 180

Leu Asn Asp Thr Gln Leu Asp Ser Gly Ser Pro Leu Arg Trp Glu
              185                 190                 195

Cys Lys Ala Thr Gly Lys Pro Arg Pro Thr Tyr Arg Trp Leu Lys
              200                 205                 210

Asn Gly Val Pro Leu Ser Pro Gln Ser Arg Val Glu Met Val Asn
              215                 220                 225

Gly Val Leu Met Ile His Asn Val Asn Gln Ser Asp Ala Gly Met
              230                 235                 240

Tyr Gln Cys Leu Ala Glu Asn Lys Tyr Gly Ala Ile Tyr Ala Ser
              245                 250                 255

Ala Glu Leu Lys Ile Leu Ala Ser Ala Pro Thr Phe Ala Leu Asn
              260                 265                 270

Gln Leu Lys Lys Thr Ile Ile Val Thr Lys Asp Gln Glu Val Val
              275                 280                 285
```

103

Ile Glu Cys Lys Pro Gln Gly Ser Pro Lys Pro Thr Ile Ser Trp
                290                 295                 300

Lys Lys Gly Asp Arg Ala Val Arg Glu Asn Lys Arg Ile Ala Ile
                305                 310                 315

Leu Pro Asp Gly Ser Leu Arg Ile Leu Asn Ala Ser Lys Ser Asp
                320                 325                 330

Glu Gly Lys Tyr Val Cys Arg Gly Glu Asn Val Phe Gly Ser Ala
                335                 340                 345

Glu


<210> 77
<211> 2137
<212> DNA
<213> Homosapiens

<400> 77
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 gaaacccggc cgctaagcga ggcctcctcc tcccgcagat ccgaacggcc 100

 tgggcggggt cacccccggct gggacaagaa gccgccgcct gcctgcccgg 150

 gcccggggag ggggctgggg ctggggccgg aggcggggtg tgagtgggtg 200

 tgtgcggggg gcggaggctt gatgcaatcc cgataagaaa tgctcgggtg 250

 tcttgggcac ctaccgtgg ggcccgtaag gcgctactat ataaggctgc 300

 cggcccggag ccgccgcgcc gtcagagcag gagcgctgcg tccaggatct 350

 agggccacga ccatcccaac ccggcactca cagccccgca gcgcatcccg 400

 gtcgccgccc agcctcccgc accccatcg ccggagctgc gccgagagcc 450

 ccagggaggt gccatgcgga gcgggtgtgt ggtggtccac gtatggatcc 500

 tggccggcct ctggctggcc gtggccgggc gcccctcgc cttctcggac 550

 gcggggcccc acgtgcacta cggctggggc gaccccatcc gcctgcggca 600

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 ctggagatca aggcagtcgc tctgcggacc gtggccatca agggcgtgca 750

 cagcgtgcgg tacctctgca tgggcgccga cggcaagatg cagggctgc 800

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 ggctacaatg tgtaccgatc cgagaagcac cgcctcccgg tctccctgag 900

 cagtgccaaa cagcggcagc tgtacaagaa cagaggcttt cttccactct 950

 ctcatttcct gcccatgctg cccatggtcc cagaggagcc tgaggacctc 1000

 aggggccact tggaatctga catgttctct tcgcccctgg agaccgacag 1050


                                 104

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catggaccca tttgggcttg tcaccggact ggaggccgtg aggagtccca 1100

gctttgagaa gtaactgaga ccatgcccgg gcctcttcac tgctgccagg 1150

ggctgtggta cctgcagcgt gggggacgtg cttctacaag aacagtcctg 1200

agtccacgtt ctgtttagct ttaggaagaa acatctagaa gttgtacata 1250

ttcagagttt tccattggca gtgccagttt ctagccaata gacttgtctg 1300

atcataacat tgtaagcctg tagcttgccc agctgctgcc tgggccccca 1350

ttctgctccc tcgaggttgc tggacaagct gctgcactgt ctcagttctg 1400

cttgaatacc tccatcgatg gggaactcac ttcctttgga aaaattctta 1450

tgtcaagctg aaattctcta attttttctc atcacttccc caggagcagc 1500

cagaagacag gcagtagttt taatttcagg aacaggtgat ccactctgta 1550

aaacagcagg taaatttcac tcaaccccat gtgggaattg atctatatct 1600

ctacttccag ggaccatttg cccttcccaa atcctccag gccagaactg 1650

actggagcag gcatggccca ccaggcttca ggagtagggg aagcctggag 1700

ccccactcca gccctgggac aacttgagaa ttccccctga ggccagttct 1750

gtcatggatg ctgtcctgag ataacttgc tgtcccggtg tcacctgctt 1800

ccatctccca gcccaccagc cctctgccca cctcacatgc ctccccatgg 1850

attggggcct cccaggcccc ccaccttatg tcaacctgca cttcttgttc 1900

aaaaatcagg aaaagaaaag atttgaagac cccaagtctt gtcaataact 1950

tgctgtgtgg aagcagcggg ggaagaccta gaacccttt cccagcactt 2000

ggttttccaa catgatattt atgagtaatt tattttgata tgtacatctc 2050

ttattttctt acattattta tgcccccaaa ttatatttat gtatgtaagt 2100

gaggtttgtt ttgtatatta aaatggagtt tgtttgt 2137
```

<210> 78
<211> 216
<212> PRT
<213> Homosapiens

<400> 78

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Met Arg Ser Gly Cys Val Val Val His Val Trp Ile Leu Ala Gly
 1               5                  10                  15

Leu Trp Leu Ala Val Ala Gly Arg Pro Leu Ala Phe Ser Asp Ala
                20                  25                  30

Gly Pro His Val His Tyr Gly Trp Gly Asp Pro Ile Arg Leu Arg
                35                  40                  45

His Leu Tyr Thr Ser Gly Pro His Gly Leu Ser Ser Cys Phe Leu
                50                  55                  60

Arg Ile Arg Ala Asp Gly Val Val Asp Cys Ala Arg Gly Gln Ser
```

105

```
Ala His Ser Leu Leu Glu Ile Lys Ala Val Ala Leu Arg Thr Val
            80                  85                  90

Ala Ile Lys Gly Val His Ser Val Arg Tyr Leu Cys Met Gly Ala
            95                  100                 105

Asp Gly Lys Met Gln Gly Leu Leu Gln Tyr Ser Glu Glu Asp Cys
            110                 115                 120

Ala Phe Glu Glu Glu Ile Arg Pro Asp Gly Tyr Asn Val Tyr Arg
            125                 130                 135

Ser Glu Lys His Arg Leu Pro Val Ser Leu Ser Ser Ala Lys Gln
            140                 145                 150

Arg Gln Leu Tyr Lys Asn Arg Gly Phe Leu Pro Leu Ser His Phe
            155                 160                 165

Leu Pro Met Leu Pro Met Val Pro Glu Glu Pro Glu Asp Leu Arg
            170                 175                 180

Gly His Leu Glu Ser Asp Met Phe Ser Ser Pro Leu Glu Thr Asp
            185                 190                 195

Ser Met Asp Pro Phe Gly Leu Val Thr Gly Leu Glu Ala Val Arg
            200                 205                 210

Ser Pro Ser Phe Glu Lys
            215
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<210> 79
<211> 3240
<212> DNA
<213> Homosapiens

<400> 79
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acgcgctgga ggagtggagc agcacccggc cggccctggg ggctgacagt 150

cggcaaagtt tggcccgaag aggaagtggt ctcaaacccc ggcaggtggc 200

gaccaggcca gaccaggggc gctcgctgcc tgcgggcggg ctgtaggcga 250

gggcgcgccc cagtgccgag acccggggct@tcaggagccg gccccgggag 300

agaagagtgc ggcggcggac ggagaaaaca actccaaagt tggcgaaagg 350

caccgcccct actcccgggc tgccgccgcc tccccgcccc cagccctggc 400

atccagagta cgggtcgagc ccgggccatg gagcccccct ggggaggcgg 450

caccagggag cctgggcgcc cggggctccg ccgcgacccc atcgggtaga 500

ccacagaagc tccgggaccc ttccggcacc tctggacagc ccaggatgct 550

gttggccacc ctcctcctcc tcctccttgg aggcgctctg gcccatccag 600

accggattat ttttccaaat catgcttgtg aggacccccc agcagtgctc 650
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accctacgct cccctctcca gccactgatc tccctgtgtg aggcacctcc 850

cagccctctg cagctgcccg ggggcaacgt caccatcact tacagctatg 900

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gggtgccatc ccacctgtag aagactttcc tacagagaat cctaatgata 2100

actcagtgct gggcaacctg cgttctctgc tacagatctt acgccaggat 2150

atgactccag gaggtggccc aggtgcccgc cgtcgtcagc ggggccgctt 2200

gatgcgacgc ctggtacgcc gtctccgccg ctggggcttg ctccctcgaa 2250
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caggaccaac ccggagcccc cctggacccc acacagcagt cctggccctg 2600

gaagatgagg acgatgtgct actggtgcca ctggctgagc cggggggtgtg 2650

ggtagctgag gcagaggatg agccactgct tacctgaggg gacctggggg 2700

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ccaccatttg ggtggctgtt tttaaaaagt aaagttctta gaggatcata 3000

ggtctggaca ctccatcctt gccaaacctc tacccaaaag tggccttaag 3050

caccggaatg ccaattaact agagaccctc cagcccccaa ggggaggatt 3100

tgggcagaac ctgaggtttt gccatccaca atccctccta cagggcctgg 3150

ctcacaaaaa gagtgcaaca aatgcttcta ttccatagct acggcattgc 3200

tcagtaagtt gaggtcaaaa ataaaggaat catacatctc 3240
```

<210> 80
<211> 713
<212> PRT
<213> Homosapiens

<400> 80

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Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Leu Gly Gly Ala Leu
  1               5                  10                  15

Ala His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp
                 20                  25                  30

Pro Pro Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro
                 35                  40                  45

Leu Val Arg Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu
                 50                  55                  60

Ile Leu Gly Ser Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys
                 65                  70                  75

Leu His Leu Ala Cys Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro
                 80                  85                  90
```

108

```
Leu Gln Pro Leu Ile Ser Leu Cys Glu Ala Pro Pro Ser Pro Leu
                95                  100                 105

Gln Leu Pro Gly Gly Asn Val Thr Ile Thr Tyr Ser Tyr Ala Gly
                110                 115                 120

Ala Arg Ala Pro Met Gly Gln Gly Phe Leu Leu Ser Tyr Ser Gln
                125                 130                 135

Asp Trp Leu Met Cys Leu Gln Glu Glu Phe Gln Cys Leu Asn His
                140                 145                 150

Arg Cys Val Ser Ala Val Gln Arg Cys Asp Gly Val Asp Ala Cys
                155                 160                 165

Gly Asp Gly Ser Asp Glu Ala Gly Cys Ser Ser Asp Pro Phe Pro
                170                 175                 180

Gly Leu Thr Pro Arg Pro Val Pro Ser Leu Pro Cys Asn Val Thr
                185                 190                 195

Leu Glu Asp Phe Tyr Gly Val Phe Ser Ser Pro Gly Tyr Thr His
                200                 205                 210

Leu Ala Ser Val Ser His Pro Gln Ser Cys His Trp Leu Leu Asp
                215                 220                 225

Pro His Asp Gly Arg Arg Leu Ala Val Arg Phe Thr Ala Leu Asp
                230                 235                 240

Leu Gly Phe Gly Asp Ala Val His Val Tyr Asp Gly Pro Gly Pro
                245                 250                 255

Pro Glu Ser Ser Arg Leu Leu Arg Ser Leu Thr His Phe Ser Asn
                260                 265                 270

Gly Lys Ala Val Thr Val Glu Thr Leu Ser Gly Gln Ala Val Val
                275                 280                 285

Ser Tyr His Thr Val Ala Trp Ser Asn Gly Arg Gly Phe Asn Ala
                290                 295                 300

Thr Tyr His Val Arg Gly Tyr Cys Leu Pro Trp Asp Arg Pro Cys
                305                 310                 315

Gly Leu Gly Ser Gly Leu Gly Ala Gly Glu Gly Leu Gly Glu Arg
                320                 325                 330

Cys Tyr Ser Glu Ala Gln Arg Cys Asp Gly Ser Trp Asp Cys Ala
                335                 340                 345

Asp Gly Thr Asp Glu Glu Asp Cys Pro Gly Cys Pro Pro Gly His
                350                 355                 360

Phe Pro Cys Gly Ala Ala Gly Thr Ser Gly Ala Thr Ala Cys Tyr
                365                 370                 375

Leu Pro Ala Asp Arg Cys Asn Tyr Gln Thr Phe Cys Ala Asp Gly
                380                 385                 390

Ala Asp Glu Arg Arg Cys Arg His Cys Gln Pro Gly Asn Phe Arg
                395                 400                 405
```

109

Cys Arg Asp Glu Lys Cys Val Tyr Glu Thr Trp Val Cys Asp Gly
            410             415             420

Gln Pro Asp Cys Ala Asp Gly Ser Asp Glu Trp Asp Cys Ser Tyr
            425             430             435

Val Leu Pro Arg Lys Val Ile Thr Ala Ala Val Ile Gly Ser Leu
            440             445             450

Val Cys Gly Leu Leu Leu Val Ile Ala Leu Gly Cys Thr Cys Lys
            455             460             465

Leu Tyr Ala Ile Arg Thr Gln Glu Tyr Ser Ile Phe Ala Pro Leu
            470             475             480

Ser Arg Met Glu Ala Glu Ile Val Gln Gln Gln Ala Pro Pro Ser
            485             490             495

Tyr Gly Gln Leu Ile Ala Gln Gly Ala Ile Pro Pro Val Glu Asp
            500             505             510

Phe Pro Thr Glu Asn Pro Asn Asp Asn Ser Val Leu Gly Asn Leu
            515             520             525

Arg Ser Leu Leu Gln Ile Leu Arg Gln Asp Met Thr Pro Gly Gly
            530             535             540

Gly Pro Gly Ala Arg Arg Arg Gln Arg Gly Arg Leu Met Arg Arg
            545             550             555

Leu Val Arg Arg Leu Arg Arg Trp Gly Leu Leu Pro Arg Thr Asn
            560             565             570

Thr Pro Ala Arg Ala Ser Glu Ala Arg Ser Gln Val Thr Pro Ser
            575             580             585

Ala Ala Pro Leu Glu Ala Leu Asp Gly Gly Thr Gly Pro Ala Arg
            590             595             600

Glu Gly Gly Ala Val Gly Gly Gln Asp Gly Glu Gln Ala Pro Pro
            605             610             615

Leu Pro Ile Lys Ala Pro Leu Pro Ser Ala Ser Thr Ser Pro Ala
            620             625             630

Pro Thr Thr Val Pro Glu Ala Pro Gly Pro Leu Pro Ser Leu Pro
            635             640             645

Leu Glu Pro Ser Leu Leu Ser Gly Val Val Gln Ala Leu Arg Gly
            650             655             660

Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr Arg Ser Pro
            665             670             675

Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu Asp Asp
            680             685             690

Val Leu Leu Val Pro Leu Ala Glu Pro Gly Val Trp Val Ala Glu
            695             700             705

Ala Glu Asp Glu Pro Leu Leu Thr
            710

110

<210> 81
<211> 4138
<212> DNA
<213> Homosapiens

<400> 81
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ggacctcatg cacatttgtg gaaactggat ggagagattt ggggaagcat 150

ggactcttta gccagcttag ttctctgtgg agtcagcttg ctcctttctg 200

gaactgtgga aggtgccatg gacttgatct tgatcaattc cctacctctt 250

gtatctgatg ctgaaacatc tctcacctgc attgcctctg ggtggcgccc 300

ccatgagccc atcaccatag gaagggactt tgaagcctta atgaaccagc 350

accaggatcc gctggaagtt actcaagatg tgaccagaga atgggctaaa 400

aaagttgttt ggaagagaga aaaggctagt aagatcaatg gtgcttattt 450

ctgtgaaggg cgagttcgag gagaggcaat caggatacga accatgaaga 500

tgcgtcaaca agcttccttc ctaccagcta ctttaactat gactgtggac 550

aagggagata acgtgaacat atctttcaaa aaggtattga ttaaagaaga 600

agatgcagtg atttacaaaa atggttcctt catccattca gtgccccggc 650

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gatgctggag tgtactcggc caggtatata ggaggaaacc tcttcacctc 750

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tatgggtgtt cctgtgccac aggctggaag ggtctgcagt gcaatgaagc 1050

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actcaggagt ttgggtctgc agtgtgaaca cagtggctgg gatggtggaa 1450
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cccgttaatc actatgaggc ttggcaacat attcaagtga caaatgagat 1650

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actttgcagg agaactggaa gttctttgta aacttggaca ccatccaaac 2800

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catggactac ttgagccaaa aacagtttat ccacagggat ctggctgcca 3050
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acagtgatgt atggtcctat ggtgtgttac tatgggagat tgttagctta 3250

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ttaatatccc tacatgtatt gcacattgta aaaagtttta gttttgatga 4050

gttgtgagtt taccttgtat actgtaggca cactttgcac tgatatatca 4100

tgagtgaata aatgtcttgc ctactcaaaa aaaaaaaa 4138
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&lt;210&gt; 82
&lt;211&gt; 1124
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 82

```
Met Asp Ser Leu Ala Ser Leu Val Leu Cys Gly Val Ser Leu Leu
 1               5                   10                  15

Leu Ser Gly Thr Val Glu Gly Ala Met Asp Leu Ile Leu Ile Asn
                20                  25                  30

Ser Leu Pro Leu Val Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile
                35                  40                  45

Ala Ser Gly Trp Arg Pro His Glu Pro Ile Thr Ile Gly Arg Asp
                50                  55                  60

Phe Glu Ala Leu Met Asn Gln His Gln Asp Pro Leu Glu Val Thr
```

```
                 65                    70                    75

Gln Asp Val Thr Arg Glu Trp Ala Lys Lys Val Val Trp Lys Arg
                 80                    85                    90

Glu Lys Ala Ser Lys Ile Asn Gly Ala Tyr Phe Cys Glu Gly Arg
                 95                   100                   105

Val Arg Gly Glu Ala Ile Arg Ile Arg Thr Met Lys Met Arg Gln
                110                   115                   120

Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr Met Thr Val Asp Lys
                125                   130                   135

Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val Leu Ile Lys Glu
                140                   145                   150

Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile His Ser Val
                155                   160                   165

Pro Arg His Glu Val Pro Asp Ile Leu Glu Val His Leu Pro His
                170                   175                   180

Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile Gly
                185                   190                   195

Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg
                200                   205                   210

Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys Asn His Leu Cys Thr
                215                   220                   225

Ala Cys Met Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys
                230                   235                   240

Ile Cys Pro Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys
                245                   250                   255

Glu Leu His Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly
                260                   265                   270

Gln Glu Gly Cys Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr
                275                   280                   285

Gly Cys Ser Cys Ala Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu
                290                   295                   300

Ala Cys His Pro Gly Phe Tyr Gly Pro Asp Cys Lys Leu Arg Cys
                305                   310                   315

Ser Cys Asn Asn Gly Glu Met Cys Asp Arg Phe Gln Gly Cys Leu
                320                   325                   330

Cys Ser Pro Gly Trp Gln Gly Leu Gln Cys Glu Arg Glu Gly Ile
                335                   340                   345

Pro Arg Met Thr Pro Lys Ile Val Asp Leu Pro Asp His Ile Glu
                350                   355                   360

Val Asn Ser Gly Lys Phe Asn Pro Ile Cys Lys Ala Ser Gly Trp
                365                   370                   375

Pro Leu Pro Thr Asn Glu Glu Met Thr Leu Val Lys Pro Asp Gly
```

Thr Val Leu His Pro Lys Asp Phe Asn His Thr Asp His Phe Ser
        395             400             405

Val Ala Ile Phe Thr Ile His Arg Ile Leu Pro Pro Asp Ser Gly
        410             415             420

Val Trp Val Cys Ser Val Asn Thr Val Ala Gly Met Val Glu Lys
        425             430             435

Pro Phe Asn Ile Ser Val Lys Val Leu Pro Lys Pro Leu Asn Ala
        440             445             450

Pro Asn Val Ile Asp Thr Gly His Asn Phe Ala Val Ile Asn Ile
        455             460             465

Ser Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys
        470             475             480

Leu Leu Tyr Lys Pro Val Asn His Tyr Glu Ala Trp Gln His Ile
        485             490             495

Gln Val Thr Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu Pro Arg
        500             505             510

Thr Glu Tyr Glu Leu Cys Val Gln Leu Val Arg Arg Gly Glu Gly
        515             520             525

Gly Glu Gly His Pro Gly Pro Val Arg Arg Phe Thr Thr Ala Ser
        530             535             540

Ile Gly Leu Pro Pro Pro Arg Gly Leu Asn Leu Leu Pro Lys Ser
        545             550             555

Gln Thr Thr Leu Asn Leu Thr Trp Gln Pro Ile Phe Pro Ser Ser
        560             565             570

Glu Asp Asp Phe Tyr Val Glu Val Glu Arg Arg Ser Val Gln Lys
        575             580             585

Ser Asp Gln Gln Asn Ile Lys Val Pro Gly Asn Leu Thr Ser Val
        590             595             600

Leu Leu Asn Asn Leu His Pro Arg Glu Gln Tyr Val Val Arg Ala
        605             610             615

Arg Val Asn Thr Lys Ala Gln Gly Glu Trp Ser Glu Asp Leu Thr
        620             625             630

Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro Gln Pro Glu Asn Ile
        635             640             645

Lys Ile Ser Asn Ile Thr His Ser Ser Ala Val Ile Ser Trp Thr
        650             655             660

Ile Leu Asp Gly Tyr Ser Ile Ser Ser Ile Thr Ile Arg Tyr Lys
        665             670             675

Val Gln Gly Lys Asn Glu Asp Gln His Val Asp Val Lys Ile Lys
        680             685             690

Asn Ala Thr Ile Ile Gln Tyr Gln Leu Lys Gly Leu Glu Pro Glu

115

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                  695                    700                    705
Thr Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser
                710                    715                    720

Ser Asn Pro Ala Phe Ser His Glu Leu Val Thr Leu Pro Glu Ser
                725                    730                    735

Gln Ala Pro Ala Asp Leu Gly Gly Gly Lys Met Leu Leu Ile Ala
                740                    745                    750

Ile Leu Gly Ser Ala Gly Met Thr Cys Leu Thr Val Leu Leu Ala
                755                    760                    765

Phe Leu Ile Ile Leu Gln Leu Lys Arg Ala Asn Val Gln Arg Arg
                770                    775                    780

Met Ala Gln Ala Phe Gln Asn Val Arg Glu Glu Pro Ala Val Gln
                785                    790                    795

Phe Asn Ser Gly Thr Leu Ala Leu Asn Arg Lys Val Lys Asn Asn
                800                    805                    810

Pro Asp Pro Thr Ile Tyr Pro Val Leu Asp Trp Asn Asp Ile Lys
                815                    820                    825

Phe Gln Asp Val Ile Gly Glu Gly Asn Phe Gly Gln Val Leu Lys
                830                    835                    840

Ala Arg Ile Lys Lys Asp Gly Leu Arg Met Asp Ala Ala Ile Lys
                845                    850                    855

Arg Met Lys Glu Tyr Ala Ser Lys Asp Asp His Arg Asp Phe Ala
                860                    865                    870

Gly Glu Leu Glu Val Leu Cys Lys Leu Gly His His Pro Asn Ile
                875                    880                    885

Ile Asn Leu Leu Gly Ala Cys Glu His Arg Gly Tyr Leu Tyr Leu
                890                    895                    900

Ala Ile Glu Tyr Ala Pro His Gly Asn Leu Leu Asp Phe Leu Arg
                905                    910                    915

Lys Ser Arg Val Leu Glu Thr Asp Pro Ala Phe Ala Ile Ala Asn
                920                    925                    930

Ser Thr Ala Ser Thr Leu Ser Ser Gln Gln Leu Leu His Phe Ala
                935                    940                    945

Ala Asp Val Ala Arg Gly Met Asp Tyr Leu Ser Gln Lys Gln Phe
                950                    955                    960

Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Gly Glu Asn
                965                    970                    975

Tyr Val Ala Lys Ile Ala Asp Phe Gly Leu Ser Arg Gly Gln Glu
                980                    985                    990

Val Tyr Val Lys Lys Thr Met Gly Arg Leu Pro Val Arg Trp Met
                995                   1000                   1005

Ala Ile Glu Ser Leu Asn Tyr Ser Val Tyr Thr Thr Asn Ser Asp
```

116

```
              1010                1015                1020
Val Trp Ser Tyr Gly Val Leu Leu Trp Glu Ile Val Ser Leu Gly
            1025                1030                1035

Gly Thr Pro Tyr Cys Gly Met Thr Cys Ala Glu Leu Tyr Glu Lys
            1040                1045                1050

Leu Pro Gln Gly Tyr Arg Leu Glu Lys Pro Leu Asn Cys Asp Asp
            1055                1060                1065

Glu Val Tyr Asp Leu Met Arg Gln Cys Trp Arg Glu Lys Pro Tyr
            1070                1075                1080

Glu Arg Pro Ser Phe Ala Gln Ile Leu Val Ser Leu Asn Arg Met
            1085                1090                1095

Leu Glu Glu Arg Lys Thr Tyr Val Asn Thr Thr Leu Tyr Glu Lys
            1100                1105                1110

Phe Thr Tyr Ala Gly Ile Asp Cys Ser Ala Glu Glu Ala Ala
            1115                1120
```

<210> 83
<211> 1964
<212> DNA
<213> Homosapiens

<400> 83
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cgcgccgggc gcagggagct gagtggacgg ctcgagacgg cggcgcgtgc 50

agcagctcca gaaagcagcg agttggcaga gcagggctgc atttccagca 100

ggagctgcga gcacagtgct ggctcacaac aagatgctca aggtgtcagc 150

cgtactgtgt gtgtgtgcag ccgcttggtg cagtcagtct ctcgcagctg 200

ccgcggcggt ggctgcagcc ggggggcggt cggacggcgg taattttctg 250

gatgataaac aatggctcac cacaatctct cagtatgaca aggaagtcgg 300

acagtggaac aaattccgag acgaagtaga ggatgattat ttccgcactt 350

ggagtccagg aaaacccttc gatcaggctt tagatccagc taaggatcca 400

tgcttaaaga tgaaatgtag tcgccataaa gtatgcattg ctcaagattc 450

tcagactgca gtctgcatta gtcaccggag cttacacac aggatgaaag 500

aagcaggagt agaccatagg cagtggaggg gtcccatatt atccacctgc 550

aagcagtgcc cagtggtcta tcccagccct gtttgtggtt cagatggtca 600

tacctactct tttcagtgca aactagaata tcaggcatgt gtcttaggaa 650

aacagatctc agtcaaatgt gaaggacatt gcccatgtcc ttcagataag 700

cccaccagta caagcagaaa tgttaagaga gcatgcagtg acctggagtt 750

cagggaagtg gcaaacagat tgcgggactg gttcaaggcc cttcatgaaa 800

gtggaagtca aaacaagaag acaaaaacat tgctgaggcc tgagagaagc 850
```

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agattcgata ccagcatctt gccaatttgc aaggactcac ttggctggat 900

gtttaacaga cttgatacaa actatgacct gctattggac cagtcagagc 950

tcagaagcat ttaccttgat aagaatgaac agtgtaccaa ggcattcttc 1000

aattcttgtg acacatacaa ggacagttta atatctaata atgagtggtg 1050

ctactgcttc cagagacagc aagacccacc ttgccagact gagctcagca 1100

atattcagaa gcggcaaggg gtaaagaagc tcctaggaca gtatatcccc 1150

ctgtgtgatg aagatggtta ctacaagcca acacaatgtc atggcagtgt 1200

tggacagtgc tggtgtgttg acagatatgg aaatgaagtc atgggatcca 1250

gaataaatgg tgttgcagat tgtgctatag attttgagat ctccggagat 1300

tttgctagtg gcgattttca tgaatggact gatgatgagg atgatgaaga 1350

cgatattatg aatgatgaag atgaaattga agatgatgat gaagatgaag 1400

gggatgatga tgatggtggt gatgaccatg atgtatacat ttgattgatg 1450

acagttgaaa tcaataaatt ctacatttct aatatttaca aaaatgatag 1500

cctatttaaa attatcttct tccccaataa caaaatgatt ctaaacctca 1550

catatatttt gtataattat ttgaaaaatt gcagctaaag ttatagaact 1600

ttatgtttaa ataagaatca tttgctttga gtttttatat tccttacaca 1650

aaaagaaaat acatatgcag tctagtcaga caaaataaag ttttgaagtg 1700

ctactataat aaatttttca cgagaacaaa ctttgtaaat cttccataag 1750

caaaatgaca gctagtgctt gggatcgtac atgttaattt tttgaaagat 1800

aattctaagt gaaatttaaa ataaataaat ttttaatgac ctgggtctta 1850

aggatttagg aaaaatatgc atgctttaat tgcatttcca aagtagcatc 1900

ttgctagacc tagatgagtc aggataacag agagatacca catgactcca 1950

aaaaaaaaaa aaaa 1964
```

<210> 84
<211> 436
<212> PRT
<213> Homosapiens

<400> 84
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Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp
  1           5              10               15

Cys Ser Gln Ser Leu Ala Ala Ala Ala Ala Val Ala Ala Ala Gly
             20              25               30

Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu
             35              40               45

Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys
             50              55               60
```

118

```
Phe Arg Asp Glu Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro
                65              70              75

Gly Lys Pro Phe Asp Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys
                80              85              90

Leu Lys Met Lys Cys Ser Arg His Lys Val Cys Ile Ala Gln Asp
                95             100             105

Ser Gln Thr Ala Val Cys Ile Ser His Arg Arg Leu Thr His Arg
               110             115             120

Met Lys Glu Ala Gly Val Asp His Arg Gln Trp Arg Gly Pro Ile
               125             130             135

Leu Ser Thr Cys Lys Gln Cys Pro Val Val Tyr Pro Ser Pro Val
               140             145             150

Cys Gly Ser Asp Gly His Thr Tyr Ser Phe Gln Cys Lys Leu Glu
               155             160             165

Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser Val Lys Cys Glu
               170             175             180

Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser Thr Ser Arg
               185             190             195

Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu Val Ala
               200             205             210

Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly Ser
               215             220             225

Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg
               230             235             240

Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp
               245             250             255

Met Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln
               260             265             270

Ser Glu Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr
               275             280             285

Lys Ala Phe Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile
               290             295             300

Ser Asn Asn Glu Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro
               305             310             315

Pro Cys Gln Thr Glu Leu Ser Asn Ile Gln Lys Arg Gln Gly Val
               320             325             330

Lys Lys Leu Leu Gly Gln Tyr Ile Pro Leu Cys Asp Glu Asp Gly
               335             340             345

Tyr Tyr Lys Pro Thr Gln Cys His Gly Ser Val Gly Gln Cys Trp
               350             355             360

Cys Val Asp Arg Tyr Gly Asn Glu Val Met Gly Ser Arg Ile Asn
               365             370             375
```

```
Gly Val Ala Asp Cys Ala Ile Asp Phe Glu Ile Ser Gly Asp Phe
            380                 385                 390

Ala Ser Gly Asp Phe His Glu Trp Thr Asp Asp Glu Asp Asp Glu
            395                 400                 405

Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu Asp Asp Asp Glu
            410                 415                 420

Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His Asp Val Tyr
            425                 430                 435

Ile
```

```
<210> 85
<211> 1832
<212> DNA
<213> Homosapiens

<400> 85
 cccacgcgtc cggcactgca gtctccagcc tgagccatgg gccgccgagc 50

 cctcctgctc ctgcttctgt cttttctggc gccctgggcc accatagccc 100

 tccggccggc cttaagggcc ctcggcagcc tacacttgcc aaccaacccc 150

 acatccctcc cggctgtagc caagaactat tcggttctct acttccaaca 200

 gaaggttgat cattttggat ttaatactgt gaaaactttt aatcagcggt 250

 acctagtagc tgataaatac tggaagaaaa atggtggatc aatactttc 300

 tacactggta atgaagggga cattatctgg ttttgtaata acacggggtt 350

 catgtgggat gtggctgagg aactgaaagc tatgttggtg tttgctgaac 400

 atcgatacta tggagagtct ctcccctttg gtgacaactc attcaaggat 450

 tccagacact tgaatttcct gacatcagaa caagctctgg ctgattttgc 500

 agagttaatc aaacacttga aaagaacaat cccaggagct gaaaatcaac 550

 ctgtcattgc cataggaggc tcctatggtg gcatgcttgc cgcctggttt 600

 aggatgaaat atcctcatat ggtagttgga gctcttgcag cttctgcccc 650

 tatctggcag tttgaggatt tagtaccttg tggtgtattt atgaagatcg 700

 taactacaga tttttaggaaa agcggtccac attgttcaga gagcatccac 750

 aggtcctggg atgccattaa tcgactctca aatactggca gtggtttgca 800

 gtggcttact ggagcccttc acttatgcag cccattaact tctcaggaca 850

 tccaacattt gaaagactgg atctctgaaa cctgggtgaa tctggcaatg 900

 gtggactatc cttatgcctc taactttta cagcctttgc ctgcttggcc 950

 tatcaaggta gtgtgccagt atttgaaaaa tcccaatgta tctgattcac 1000

 tgctgctgca gaatattttc caagctctga atgtatatta caattattcg 1050
```

```
ggccaggtga aatgcctgaa tatttcagag acagcaacta gcagtctggg 1100

aacactgggt tggagctatc aggcctgcac agaagtagtc atgccctttt 1150

gtactaatgg tgtcgatgac atgtttgaac ctcactcatg gaacttaaag 1200

gaactttctg atgactgttt tcaacagtgg ggtgtgagac caaggccctc 1250

ctggatcact actatgtatg gaggcaaaaa cattagttca cacacaaaca 1300

ttgttttcag caatggtgaa ctagacccct ggtcaggagg tggagtaact 1350

aaggatatca cagacactct ggttgcagtc accatctcag aggggggccca 1400

ccacttagat ctccgcacca agaatgcctt ggatcctatg tctgtgctgt 1450

tagcccgctc cttggaagtt agacatatga agaattggat cagagatttc 1500

tatgacagtg cgggaaagca gcactgagaa acttttgatt gttttcaatt 1550

tcttctttta tgttcacacc accacattcc cattcacttt gattttctac 1600

atgtaattac cttcttttgt ttatcattag atttgatggg gccaaagttg 1650

agatagaata gagggtgatg acggtaagag caagtgtccc atgaatgtga 1700

tttcctgggt tctcactgtc ctttgcacca cgtctaggaa gaatcttctt 1750

gatagctctc ccacaccatc agtggccctc ataactggag tagagttcct 1800

ggttgctttt cataagaggg agagttactt tc 1832
```

<210> 86
<211> 496
<212> PRT
<213> Homosapiens

<400> 86

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Met Gly Arg Arg Ala Leu Leu Leu Leu Leu Ser Phe Leu Ala
  1               5                  10                  15

Pro Trp Ala Thr Ile Ala Leu Arg Pro Ala Leu Arg Ala Leu Gly
                  20                  25                  30

Ser Leu His Leu Pro Thr Asn Pro Thr Ser Leu Pro Ala Val Ala
                  35                  40                  45

Lys Asn Tyr Ser Val Leu Tyr Phe Gln Gln Lys Val Asp His Phe
                  50                  55                  60

Gly Phe Asn Thr Val Lys Thr Phe Asn Gln Arg Tyr Leu Val Ala
                  65                  70                  75

Asp Lys Tyr Trp Lys Lys Asn Gly Gly Ser Ile Leu Phe Tyr Thr
                  80                  85                  90

Gly Asn Glu Gly Asp Ile Ile Trp Phe Cys Asn Asn Thr Gly Phe
                  95                  100                 105

Met Trp Asp Val Ala Glu Glu Leu Lys Ala Met Leu Val Phe Ala
                  110                 115                 120

Glu His Arg Tyr Tyr Gly Glu Ser Leu Pro Phe Gly Asp Asn Ser
```

Phe Lys Asp Ser Arg His Leu Asn Phe Leu Thr Ser Glu Gln Ala
              140                145                150

Leu Ala Asp Phe Ala Glu Leu Ile Lys His Leu Lys Arg Thr Ile
              155                160                165

Pro Gly Ala Glu Asn Gln Pro Val Ile Ala Ile Gly Gly Ser Tyr
              170                175                180

Gly Gly Met Leu Ala Ala Trp Phe Arg Met Lys Tyr Pro His Met
              185                190                195

Val Val Gly Ala Leu Ala Ala Ser Ala Pro Ile Trp Gln Phe Glu
              200                205                210

Asp Leu Val Pro Cys Gly Val Phe Met Lys Ile Val Thr Thr Asp
              215                220                225

Phe Arg Lys Ser Gly Pro His Cys Ser Glu Ser Ile His Arg Ser
              230                235                240

Trp Asp Ala Ile Asn Arg Leu Ser Asn Thr Gly Ser Gly Leu Gln
              245                250                255

Trp Leu Thr Gly Ala Leu His Leu Cys Ser Pro Leu Thr Ser Gln
              260                265                270

Asp Ile Gln His Leu Lys Asp Trp Ile Ser Glu Thr Trp Val Asn
              275                280                285

Leu Ala Met Val Asp Tyr Pro Tyr Ala Ser Asn Phe Leu Gln Pro
              290                295                300

Leu Pro Ala Trp Pro Ile Lys Val Val Cys Gln Tyr Leu Lys Asn
              305                310                315

Pro Asn Val Ser Asp Ser Leu Leu Leu Gln Asn Ile Phe Gln Ala
              320                325                330

Leu Asn Val Tyr Tyr Asn Tyr Ser Gly Gln Val Lys Cys Leu Asn
              335                340                345

Ile Ser Glu Thr Ala Thr Ser Ser Leu Gly Thr Leu Gly Trp Ser
              350                355                360

Tyr Gln Ala Cys Thr Glu Val Val Met Pro Phe Cys Thr Asn Gly
              365                370                375

Val Asp Asp Met Phe Glu Pro His Ser Trp Asn Leu Lys Glu Leu
              380                385                390

Ser Asp Asp Cys Phe Gln Gln Trp Gly Val Arg Pro Arg Pro Ser
              395                400                405

Trp Ile Thr Thr Met Tyr Gly Gly Lys Asn Ile Ser Ser His Thr
              410                415                420

Asn Ile Val Phe Ser Asn Gly Glu Leu Asp Pro Trp Ser Gly Gly
              425                430                435

Gly Val Thr Lys Asp Ile Thr Asp Thr Leu Val Ala Val Thr Ile

122

Ser Glu Gly Ala His His Leu Asp Leu Arg Thr Lys Asn Ala Leu
              455                460                465

Asp Pro Met Ser Val Leu Leu Ala Arg Ser Leu Glu Val Arg His
              470                475                480

Met Lys Asn Trp Ile Arg Asp Phe Tyr Asp Ser Ala Gly Lys Gln
              485                490                495

His


<210> 87
<211> 1894
<212> DNA
<213> Homosapiens

<400> 87
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tgtcttgcgt gatattgaca aactgaagct ttcctgcacc actggactta 100

aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150

tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200

tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250

gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300

cagaaatttt atccaacttt gtttggaagc ttattatgac aataccattt 350

ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400

acagggagtg gtggagagtc tatctatgga gcgccattca agatgaatt 450

tcattcacgg ttgcgtttta atcggagagg actggttgcc atggcaaatg 500

ctggttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550

gatgaactta caaataagca taccatcttt ggaaaggtta caggggatac 600

agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650

gaccacataa tccacacaaa ataaaaagct gtgaggtttt gtttaatcct 700

tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750

agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aattttagtt 800

tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850

gttagtcaga gcatgaaggg caaaagcaaa agtagtcatg acttgcttaa 900

ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaaggtg 950

atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000

gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050

aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100

aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150

agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200

tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gcccctccag 1250

atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300

aggaagcaac agtcaaagaa gggaacttcc cgggaagatc agacccttgc 1350

actgctgaac cagtttaaat ctaaactcac tcaagcaatt gctgaaacac 1400

ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450

tcacatgtac ttcagtttga ggataaaagc agaaaagtga agatgcaag 1500

catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550

ataaaagaag gagggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600

agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650

acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700

gaaaagaagt attttgaac ctgttgtctg gttttgaaaa acaattatct 1750

tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800

catgtgtttt ttcctagctg acctttata ttgctaaatc tgaaataaaa 1850

taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 88
<211> 472
<212> PRT
<213> Homosapiens

<400> 88
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Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val
  1               5                  10                  15

Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser
             20                  25                  30

Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu
             35                  40                  45

Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly
             50                  55                  60

Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly
             65                  70                  75

Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg
             80                  85                  90

Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly
             95                 100                 105

Ser His Asp Asn Gly Ser Gln Phe Phe Phe Thr Leu Gly Arg Ala
            110                 115                 120

Asp Glu Leu Asn Asn Lys His Thr Ile Phe Gly Lys Val Thr Gly
```

124

```
                 125                      130                      135
Asp Thr Val Tyr Asn Met Leu Arg Leu Ser Glu Val Asp Ile Asp
                140                      145                      150

Asp Asp Glu Arg Pro His Asn Pro His Lys Ile Lys Ser Cys Glu
                155                      160                      165

Val Leu Phe Asn Pro Phe Asp Asp Ile Ile Pro Arg Glu Ile Lys
                170                      175                      180

Arg Leu Lys Lys Glu Lys Pro Glu Glu Glu Val Lys Lys Leu Lys
                185                      190                      195

Pro Lys Gly Thr Lys Asn Phe Ser Leu Leu Ser Phe Gly Glu Glu
                200                      205                      210

Ala Glu Glu Glu Glu Glu Glu Val Asn Arg Val Ser Gln Ser Met
                215                      220                      225

Lys Gly Lys Ser Lys Ser Ser His Asp Leu Leu Lys Asp Asp Pro
                230                      235                      240

His Leu Ser Ser Val Pro Val Val Glu Ser Glu Lys Gly Asp Ala
                245                      250                      255

Pro Asp Leu Val Asp Asp Gly Glu Asp Glu Ser Ala Glu His Asp
                260                      265                      270

Glu Tyr Ile Asp Gly Asp Glu Lys Asn Leu Met Arg Glu Arg Ile
                275                      280                      285

Ala Lys Lys Leu Lys Lys Asp Thr Ser Ala Asn Val Lys Ser Ala
                290                      295                      300

Gly Glu Gly Glu Val Glu Lys Lys Ser Val Ser Arg Ser Glu Glu
                305                      310                      315

Leu Arg Lys Glu Ala Arg Gln Leu Lys Arg Glu Leu Leu Ala Ala
                320                      325                      330

Lys Gln Lys Lys Val Glu Asn Ala Ala Lys Gln Ala Glu Lys Arg
                335                      340                      345

Ser Glu Glu Glu Glu Ala Pro Pro Asp Gly Ala Val Ala Glu Tyr
                350                      355                      360

Arg Arg Glu Lys Gln Lys Tyr Glu Ala Leu Arg Lys Gln Gln Ser
                365                      370                      375

Lys Lys Gly Thr Ser Arg Glu Asp Gln Thr Leu Ala Leu Leu Asn
                380                      385                      390

Gln Phe Lys Ser Lys Leu Thr Gln Ala Ile Ala Glu Thr Pro Glu
                395                      400                      405

Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met
                410                      415                      420

Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp
                425                      430                      435

Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg
```

Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met
              455                  460                  465

Arg Glu Lys Lys Glu Arg Arg
              470

<210> 89
<211> 1196
<212> DNA
<213> Homosapiens

<400> 89
cccggctccg ctccctctgc cccctcgggg tcgcgcgccc acgatgctgc 50

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ggctcggcgc gcgggctctt cctctttggc cagcccgact tctcctacaa 150

gcgcagcaat tgcaagccca tcccggtcaa cctgcagctg tgccacggca 200

tcgaatacca gaacatgcgg ctgcccaacc tgctgggcca cgagaccatg 250

aaggaggtgc tggagcaggc cggcgcttgg atcccgctgg tcatgaagca 300

gtgccacccg gacaccaaga agttcctgtg ctcgctcttc gcccccgtct 350

gcctcgatga cctagacgag accatccagc catgccactc gctctgcgtg 400

caggtgaagg accgctgcgc cccggtcatg tccgccttcg gcttcccctg 450

gcccgacatg cttgagtgcg accgtttccc ccaggacaac gacctttgca 500

tcccccctcgc tagcagcgac cacctcctgc cagccaccga ggaagctcca 550

aaggtatgtg aagcctgcaa aaataaaaat gatgatgaca acgacataat 600

ggaaacgctt tgtaaaaatg attttgcact gaaaataaaa gtgaaggaga 650

taacctacat caaccgagat accaaaatca tcctggagac caagagcaag 700

accatttaca agctgaacgg tgtgtccgaa agggacctga agaaatcggt 750

gctgtggctc aaagacagct tgcagtgcac ctgtgaggag atgaacgaca 800

tcaacgcgcc ctatctggtc atgggacaga aacagggtgg ggagctggtg 850

atcacctcgg tgaagcggtg gcagaagggg cagagagagt tcaagcgcat 900

ctcccgcagc atccgcaagc tgcagtgcta gtcccggcat cctgatggct 950

ccgacaggcc tgctccagag cacggctgac catttctgct ccgggatctc 1000

agctcccgtt ccccaagcac actcctagct gctccagtct cagcctgggc 1050

agcttccccc tgccttttgc acgtttgcat ccccagcatt tcctgagtta 1100

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gaatcttgta gaaatattca aactaataaa atcatgaata ttttaa 1196

<210> 90

<211> 295
<212> PRT
<213> Homosapiens

<400> 90

| Met | Leu | Gln | Gly | Pro | Gly | Ser | Leu | Leu | Leu | Leu | Phe | Leu | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

His Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln
                20                  25                  30

Pro Asp Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Val
                35                  40                  45

Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu
                50                  55                  60

Pro Asn Leu Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln
                65                  70                  75

Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp
                80                  85                  90

Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp
                95                  100                 105

Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln
                110                 115                 120

Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro
                125                 130                 135

Trp Pro Asp Met Leu Glu Cys Asp Arg Phe Pro Gln Asp Asn Asp
                140                 145                 150

Leu Cys Ile Pro Leu Ala Ser Ser Asp His Leu Leu Pro Ala Thr
                155                 160                 165

Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys Asn Lys Asn Asp
                170                 175                 180

Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn Asp Phe Ala
                185                 190                 195

Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg Asp Thr
                200                 205                 210

Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu Asn
                215                 220                 225

Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys
                230                 235                 240

Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala
                245                 250                 255

Pro Tyr Leu Val Met Gly Gln Lys Gln Gly Gly Glu Leu Val Ile
                260                 265                 270

Thr Ser Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg
                275                 280                 285

Ile Ser Arg Ser Ile Arg Lys Leu Gln Cys

<210> 91
<211> 3819
<212> DNA
<213> Homosapiens

<400> 91
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agacctggag ggtctcgctc tgtcacacag gctggagtgc agtggtgtga 100

tcttggctca tcgtaacctc cacctcccgg gttcaagtga ttctcatgcc 150

tcagcctccc gagtagctgg gattacaggt ggtgacttcc aagagtgact 200

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tgctgagtct gctcttcctg gtccaaggtg cccacggcag gggccacagg 300

gaagactttc gcttctgcag ccagcggaac cagacacaca ggagcagcct 350

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ctcaaggagg ccctcggctg cccccgccag ccagcagttg cagagcctgg 850

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gtgctcactt tccagcacca gctacagccg aagaatgtga ctctgcaatg 1250

tgtgttctgg gttgaagacc ccacattgag cagcccgggg cattggagca 1300

gtgctgggtg tgagaccgtc aggagagaaa cccaaacatc ctgcttctgc 1350

aaccacttga cctactttgc agtgctgatg gtctcctcgg tggaggtgga 1400

128

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cgccgtgcac aagcactacc tgagcctcct ctcctacgtg ggctgtgtcg 1450

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129

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gtggtttcca ggagctgcct ggtgtctgct gtaaatgttt gtctactgca 3050

caagcctcgg cctgcccctg agccaggctc ggtaccgatg cgtgggctgg 3100

gctaggtccc tctgtccatc tgggcctttg tatgagctgc attgcccttg 3150

ctcaccctga ccaagcacac gcctcagagg ggccctcagc ctctcctgaa 3200

gccctcttgt ggcaagaact gtggaccatg ccagtcccgt ctggtttcca 3250

tcccaccact ccaaggactg agactgacct cctctggtga cactggccta 3300

gagcctgaca ctctcctaag aggttctctc caagccccca aatagctcca 3350

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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3800

aaaaaaaaaa aaaaaaaaa 3819
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<210> 92
<211> 693
<212> PRT
<213> Homosapiens

<400> 92

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Met Thr Pro Gln Ser Leu Leu Gln Thr Thr Leu Phe Leu Leu Ser
  1               5                  10                  15

Leu Leu Phe Leu Val Gln Gly Ala His Gly Arg Gly His Arg Glu
                 20                  25                  30

Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser
                 35                  40                  45

Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn
                 50                  55                  60

Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His
                 65                  70                  75

Pro Ala Ser Arg Ser Phe Pro Asp Pro Arg Gly Leu Tyr His Phe
                 80                  85                  90

Cys Leu Tyr Trp Asn Arg His Ala Gly Arg Leu His Leu Leu Tyr
                 95                  100                 105

Gly Lys Arg Asp Phe Leu Leu Ser Asp Lys Ala Ser Ser Leu Leu
                 110                 115                 120
```

130

```
Cys Phe Gln His Gln Glu Glu Ser Leu Ala Gln Gly Pro Pro Leu
            125                 130                     135

Leu Ala Thr Ser Val Thr Ser Trp Trp Ser Pro Gln Asn Ile Ser
            140                 145                     150

Leu Pro Ser Ala Ala Ser Phe Thr Phe Ser Phe His Ser Pro Pro
            155                 160                     165

His Thr Ala Ala His Asn Ala Ser Val Asp Met Cys Glu Leu Lys
            170                 175                     180

Arg Asp Leu Gln Leu Leu Ser Gln Phe Leu Lys His Pro Gln Lys
            185                 190                     195

Ala Ser Arg Arg Pro Ser Ala Ala Pro Ala Ser Gln Gln Leu Gln
            200                 205                     210

Ser Leu Glu Ser Lys Leu Thr Ser Val Arg Phe Met Gly Asp Met
            215                 220                     225

Val Ser Phe Glu Glu Asp Arg Ile Asn Ala Thr Val Trp Lys Leu
            230                 235                     240

Gln Pro Thr Ala Gly Leu Gln Asp Leu His Ile His Ser Arg Gln
            245                 250                     255

Glu Glu Glu Gln Ser Glu Ile Met Glu Tyr Ser Val Leu Leu Pro
            260                 265                     270

Arg Thr Leu Phe Gln Arg Thr Lys Gly Arg Ser Gly Glu Ala Glu
            275                 280                     285

Lys Arg Leu Leu Leu Val Asp Phe Ser Ser Gln Ala Leu Phe Gln
            290                 295                     300

Asp Lys Asn Ser Ser Gln Val Leu Gly Glu Lys Val Leu Gly Ile
            305                 310                     315

Val Val Gln Asn Thr Lys Val Ala Asn Leu Thr Glu Pro Val Val
            320                 325                     330

Leu Thr Phe Gln His Gln Leu Gln Pro Lys Asn Val Thr Leu Gln
            335                 340                     345

Cys Val Phe Trp Val Glu Asp Pro Thr Leu Ser Ser Pro Gly His
            350                 355                     360

Trp Ser Ser Ala Gly Cys Glu Thr Val Arg Arg Glu Thr Gln Thr
            365                 370                     375

Ser Cys Phe Cys Asn His Leu Thr Tyr Phe Ala Val Leu Met Val
            380                 385                     390

Ser Ser Val Glu Val Asp Ala Val His Lys His Tyr Leu Ser Leu
            395                 400                     405

Leu Ser Tyr Val Gly Cys Val Val Ser Ala Leu Ala Cys Leu Val
            410                 415                     420

Thr Ile Ala Ala Tyr Leu Cys Ser Arg Val Pro Leu Pro Cys Arg
            425                 430                     435
```

131

```
Arg Lys Pro Arg Asp Tyr Thr Ile Lys Val His Met Asn Leu Leu
            440             445                     450

Leu Ala Val Phe Leu Leu Asp Thr Ser Phe Leu Leu Ser Glu Pro
            455             460                     465

Val Ala Leu Thr Gly Ser Glu Ala Gly Cys Arg Ala Ser Ala Ile
            470             475                     480

Phe Leu His Phe Ser Leu Leu Thr Cys Leu Ser Trp Met Gly Leu
            485             490                     495

Glu Gly Tyr Asn Leu Tyr Arg Leu Val Val Glu Val Phe Gly Thr
            500             505                     510

Tyr Val Pro Gly Tyr Leu Leu Lys Leu Ser Ala Met Gly Trp Gly
            515             520                     525

Phe Pro Ile Phe Leu Val Thr Leu Val Ala Leu Val Asp Val Asp
            530             535                     540

Asn Tyr Gly Pro Ile Ile Leu Ala Val His Arg Thr Pro Glu Gly
            545             550                     555

Val Ile Tyr Pro Ser Met Cys Trp Ile Arg Asp Ser Leu Val Ser
            560             565                     570

Tyr Ile Thr Asn Leu Gly Leu Phe Ser Leu Val Phe Leu Phe Asn
            575             580                     585

Met Ala Met Leu Ala Thr Met Val Val Gln Ile Leu Arg Leu Arg
            590             595                     600

Pro His Thr Gln Lys Trp Ser His Val Leu Thr Leu Leu Gly Leu
            605             610                     615

Ser Leu Val Leu Gly Leu Pro Trp Ala Leu Ile Phe Phe Ser Phe
            620             625   ·                 630

Ala Ser Gly Thr Phe Gln Leu Val Val Leu Tyr Leu Phe Ser Ile
            635             640                     645

Ile Thr Ser Phe Gln Gly Phe Leu Ile Phe Ile Trp Tyr Trp Ser
            650             655                     660

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
            665             670                     675

Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
            680             685                     690

Ser Arg Ile
```

·

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<210> 93
<211> 647
<212> DNA
<213> Homosapiens

<400> 93
cccacgcgtc cgaaggcaga caaaggttca tttgtaaaga agctccttcc 50

agcacctcct ctcttctcct tttgcccaaa ctcacccagt gagtgtgagc 100
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132

```
atttaagaag catcctctgc caagaccaaa aggaaagaag aaaaagggcc 150

aaaagccaaa atgaaactga tggtacttgt tttcaccatt gggctaactt 200

tgctgctagg agttcaagcc atgcctgcaa atcgcctctc ttgctacaga 250

aagatactaa aagatcacaa ctgtcacaac cttccggaag gagtagctga 300

cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350

gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgccca 400

aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450

tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttcccac 500

aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550

tagagcatag attctataaa ttcttacttg tctaagacaa gtaaatctgt 600

gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaaa 647
```

```
<210> 94
<211> 98
<212> PRT
<213> Homosapiens

<400> 94
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```
Met Lys Leu Met Val Leu Val Phe Thr Ile Gly Leu Thr Leu Leu
 1               5                  10                  15

Leu Gly Val Gln Ala Met Pro Ala Asn Arg Leu Ser Cys Tyr Arg
                20              25                  30

Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
                35                  40                  45

Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp
                50                  55                  60

Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
                65                  70                  75

Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser
                80                  85                  90

Phe Val Ile Pro Cys Asn Asn Gln
                95
```

```
<210> 95
<211> 531
<212> DNA
<213> Murine

<400> 95
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gaattccggg ccccaggatg ccaactttga ataggatgaa gactacaact 50

tgttcccttc tcatctgcat ctccctgctc cagctgatgg tcccagtgaa 100

tactgatgag accatagaga ttatcgtgga gaataaggtc aaggaacttc 150

ttgccaatcc agctaactat ccctccactg taacgaagac tctctcttgc 200
```

actagtgtca agactatgaa cagatgggcc tcctgccctg ctgggatgac 250

tgctactggg tgtgcttgtg gctttgcctg tggatcttgg gagatccaga 300

gtggagatac ttgcaactgc ctgtgcttac tcgttgactg gaccactgcc 350

cgctgctgcc aactgtccta agaatgaaga ggtggagaac ccagctttga 400

tatgatgaat ctaacaaaaa ctgcagtctc aatttggaaa tctgactcat 450

gtgcctttaa atgtgttcat attgcccatt taccctgctt cttgaaatgc 500

ttcttgaaaa ataaagacaa atttgcatgt g 531

<210> 96
<211> 111
<212> PRT
<213> Murine

<400> 96
```
Met Lys Thr Thr Thr Cys Ser Leu Leu Ile Cys Ile Ser Leu Leu
  1               5                  10                  15

Gln Leu Met Val Pro Val Asn Thr Asp Glu Thr Ile Glu Ile Ile
             20                  25                  30

Val Glu Asn Lys Val Lys Glu Leu Leu Ala Asn Pro Ala Asn Tyr
             35                  40                  45

Pro Ser Thr Val Thr Lys Thr Leu Ser Cys Thr Ser Val Lys Thr
             50                  55                  60

Met Asn Arg Trp Ala Ser Cys Pro Ala Gly Met Thr Ala Thr Gly
             65                  70                  75

Cys Ala Cys Gly Phe Ala Cys Gly Ser Trp Glu Ile Gln Ser Gly
             80                  85                  90

Asp Thr Cys Asn Cys Leu Cys Leu Leu Val Asp Trp Thr Thr Ala
             95                  100                 105

Arg Cys Cys Gln Leu Ser
             110
```

<210> 97
<211> 1121
<212> DNA
<213> Homosapiens

<400> 97
gaggcagaaa ggcagaaagg agaaaattca ggataactct cctgaggggt 50

gagccaagcc ctgccatgta gtgcacgcag gacatcaaca aacacagata 100

acaggaaatg atccattccc tgtggtcact tattctaaag ccccaacct 150

tcaaagttca agtagtgata tggatgactc cacagaaagg gagcagtcac 200

gccttacttc ttgccttaag aaaagagaag aaatgaaact gaaggagtgt 250

gtttccatcc tcccacggaa ggaaagcccc tctgtccgat cctccaaaga 300

cggaaagctg ctggctgcaa ccttgctgct ggcactgctg tcttgctgcc 350

```
tcacggtggt gtctttctac caggtggccg ccctgcaagg ggacctggcc 400

agcctccggg cagagctgca gggccaccac gcggagaagc tgccagcagg 450

agcaggagcc cccaaggccg gcctggagga agctccagct gtcaccgcgg 500

gactgaaaat ctttgaacca ccagctccag gagaaggcaa ctccagtcag 550

aacagcagaa ataagcgtgc cgttcagggt ccagaagaaa cagtcactca 600

agactgcttg caactgattg cagacagtga aacaccaact atacaaaaag 650

gatcttacac atttgttcca tggcttctca gctttaaaag gggaagtgcc 700

ctagaagaaa aagagaataa aatattggtc aaagaaactg gttacttttt 750

tatatatggt caggttttat atactgataa gacctacgcc atgggacatc 800

taattcagag gaagaaggtc catgtctttg gggatgaatt gagtctggtg 850

actttgtttc gatgtattca aaatatgcct gaaacactac ccaataattc 900

ctgctattca gctggcattg caaaactgga agaaggagat gaactccaac 950

ttgcaatacc aagagaaaat gcacaaatat cactggatgg agatgtcaca 1000

ttttttggtg cattgaaact gctgtgacct acttacacca tgtctgtagc 1050

tattttcctc cctttctctg tacctctaag aagaaagaat ctaactgaaa 1100

ataccaaaaa aaaaaaaaaa a 1121
```

<210> 98
<211> 285
<212> PRT
<213> Homosapiens

<400> 98

```
Met Asp Asp Ser Thr Glu Arg Glu Gln Ser Arg Leu Thr Ser Cys
  1               5                  10                  15

Leu Lys Lys Arg Glu Glu Met Lys Leu Lys Glu Cys Val Ser Ile
             20              25                  30

Leu Pro Arg Lys Glu Ser Pro Ser Val Arg Ser Ser Lys Asp Gly
             35              40                  45

Lys Leu Leu Ala Ala Thr Leu Leu Leu Ala Leu Leu Ser Cys Cys
             50              55                  60

Leu Thr Val Val Ser Phe Tyr Gln Val Ala Ala Leu Gln Gly Asp
             65              70                  75

Leu Ala Ser Leu Arg Ala Glu Leu Gln Gly His His Ala Glu Lys
             80              85                  90

Leu Pro Ala Gly Ala Gly Ala Pro Lys Ala Gly Leu Glu Glu Ala
             95              100                 105

Pro Ala Val Thr Ala Gly Leu Lys Ile Phe Glu Pro Pro Ala Pro
             110             115                 120

Gly Glu Gly Asn Ser Ser Gln Asn Ser Arg Asn Lys Arg Ala Val
```

135

Gln Gly Pro Glu Glu Thr Val Thr Gln Asp Cys Leu Gln Leu Ile
              140                 145                 150

Ala Asp Ser Glu Thr Pro Thr Ile Gln Lys Gly Ser Tyr Thr Phe
              155                 160                 165

Val Pro Trp Leu Leu Ser Phe Lys Arg Gly Ser Ala Leu Glu Glu
              170                 175                 180

Lys Glu Asn Lys Ile Leu Val Lys Glu Thr Gly Tyr Phe Phe Ile
              185                 190                 195

Tyr Gly Gln Val Leu Tyr Thr Asp Lys Thr Tyr Ala Met Gly His
              200                 205                 210

Leu Ile Gln Arg Lys Lys Val His Val Phe Gly Asp Glu Leu Ser
              215                 220                 225

Leu Val Thr Leu Phe Arg Cys Ile Gln Asn Met Pro Glu Thr Leu
              230                 235                 240

Pro Asn Asn Ser Cys Tyr Ser Ala Gly Ile Ala Lys Leu Glu Glu
              245                 250                 255

Gly Asp Glu Leu Gln Leu Ala Ile Pro Arg Glu Asn Ala Gln Ile
              260                 265                 270

Ser Leu Asp Gly Asp Val Thr Phe Phe Gly Ala Leu Lys Leu Leu
              275                 280                 285

<210> 99
<211> 1885
<212> DNA
<213> Homosapiens

<400> 99
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 cggcccggag gtggggcgcc gctggggccg gcccgcacgg gcttcatctg 100

 agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150

 gcgacaagct gccggagctg caatgggccg cggctgggga ttcttgtttg 200

 gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250

 cccccggaga cagcggcaca gaggtgcttc tgccaggtta gtggttactt 300

 ggatgattgt acctgtgatg ttgaaaccat tgatagattt aataactaca 350

 ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400

 tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450

 gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500

 ctgatggaat aaatctgcg agctacaagt attctgaaga agccaataat 550

 ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600

 tctgagtgag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650

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attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700

gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750

accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800

agccacagac aattaaaaga cctttaaatc ctttggcttc tggtcaaggg 850

acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900

aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950

tgcatttgag tgcaagatat cttttacaag agacctggtt agaaaagaaa 1000

tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050

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agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300

gactttcgac tgcattttag aaatatttca agaattatgg attgtgttgg 1350

ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400

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atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700

aaggagaatt atattgtttt aagtaaacac attttaaaa attgtgttaa 1750

gtctatgtat aatactactg tgagtaaaag taatacttta ataatgtggt 1800

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aaaaaaaaaa aaaaaaaaaa aaaaaaaaa aaaaa 1885
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<210> 100
<211> 468
<212> PRT
<213> Homosapiens

<400> 100

```
Met Gly Arg Gly Trp Gly Phe Leu Phe Gly Leu Leu Gly Ala Val
 1               5                  10                 15

Trp Leu Leu Ser Ser Gly His Gly Glu Glu Gln Pro Pro Glu Thr
                 20              25                 30

Ala Ala Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp
```

```
                   35                          40                          45

Cys Thr Cys Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg
                 50                          55                          60

Leu Phe Pro Arg Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg
                 65                          70                          75

Tyr Tyr Lys Val Asn Leu Lys Arg Pro Cys Pro Phe Trp Asn Asp
                 80                          85                          90

Ile Ser Gln Cys Gly Arg Arg Asp Cys Ala Val Lys Pro Cys Gln
                 95                         100                         105

Ser Asp Glu Val Pro Asp Gly Ile Lys Ser Ala Ser Tyr Lys Tyr
                110                         115    .                    120

Ser Glu Glu Ala Asn Asn Leu Ile Glu Glu Cys Glu Gln Ala Glu
                125                         130                         135

Arg Leu Gly Ala Val Asp Glu Ser Leu Ser Glu Glu Thr Gln Lys
                140                         145                         150

Ala Val Leu Gln Trp Thr Lys His Asp Asp Ser Ser Asp Asn Phe
                155                         160                         165

Cys Glu Ala Asp Asp Ile Gln Ser Pro Glu Ala Glu Tyr Val Asp
                170                         175                         180

Leu Leu Leu Asn Pro Glu Arg Tyr Thr Gly Tyr Lys Gly Pro Asp
                185                         190                         195

Ala Trp Lys Ile Trp Asn Val Ile Tyr Glu Glu Asn Cys Phe Lys
                200                         205                         210

Pro Gln Thr Ile Lys Arg Pro Leu Asn Pro Leu Ala Ser Gly Gln
                215                         220                         225

Gly Thr Ser Glu Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu
                230                         235                         240

Cys Val Glu Lys Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His
                245                         250                         255

Ala Ser Ile Asn Val His Leu Ser Ala Arg Tyr Leu Leu Gln Glu
                260                         265                         270

Thr Trp Leu Glu Lys Lys Trp Gly His Asn Ile Thr Glu Phe Gln
                275                         280                         285

Gln Arg Phe Asp Gly Ile Leu Thr Glu Gly Glu Gly Pro Arg Arg
                290                         295                         300

Leu Lys Asn Leu Tyr Phe Leu Tyr Leu Ile Glu Leu Arg Ala Leu
                305                         310                         315

Ser Lys Val Leu Pro Phe Phe Glu Arg Pro Asp Phe Gln Leu Phe
                320                         325                         330

Thr Gly Asn Lys Ile Gln Asp Glu Glu Asn Lys Met Leu Leu Leu
                335                         340                         345

Glu Ile Leu His Glu Ile Lys Ser Phe Pro Leu His Phe Asp Glu

                                      138
```

```
                    350                355                360
Asn Ser Phe Phe Ala Gly Asp Lys Lys Glu Ala His Lys Leu Lys
                365                370                375
Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp
                380                385                390
Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr
                395                400                405
Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu
                410                415                420
Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu
                425                430                435
Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile
                440                445                450
Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln
                455                460                465
Asn Ile His
```

<210> 101
<211> 1615
<212> DNA
<213> Homosapiens

<400> 101
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 gcctagccag gccaagaatg caattgcccc ggtggtggga gctgggagac 50

 ccctgtgctt ggacgggaca gggtcggggg acacgcagga tgagccccgc 100

 gaccactggc acattcttgc tgacagtgta cagtattttc tccaaggtac 150

 actccgatcg gaatgtatac ccatcagcag gtgtcctctt tgttcatgtt 200

 ttggaaagag aatattttaa gggggaattt ccaccttacc caaaacctgg 250

 cgagattagt aatgatccca taacatttaa tacaaattta atgggttacc 300

 cagaccgacc tggatggctt cgatatatcc aaaggacacc atatagtgat 350

 ggagtcctat atgggtcccc aacagctgaa aatgtgggga agccaacaat 400

 cattgagata actgcctaca acaggcgcac ctttgagact gcaaggcata 450

 atttgataat taatataatg tctgcagaag acttcccgtt gccatatcaa 500

 gcagaattct tcattaagaa tatgaatgta gaagaaatgt ggccagtga 550

 ggttcttgga gactttcttg cgcagtgaa aaatgtgtgg cagccagagc 600

 gcctgaacgc cataaacatc acatcggccc tagacagggg tggcagggtg 650

 ccacttccca ttaatgacct gaaggagggc gtttatgtca tggttggtgc 700

 agatgtcccg ttttcttctt gtttacgaga agttgaaaat ccacagaatc 750

 aattgagatg tagtcaagaa atggagcctg taataacatg tgataaaaaa 800
```

```
tttcgtactc aattttacat tgactggtgc aaaatttcat tggttgataa 850

aacaaagcaa gtgtccacct atcaggaagt gattcgtgga gagggggattt 900

tacctgatgg tggagaatac aaaccccctt ctgattcttt gaaaagcaga 950

gactattaca cggatttcct aattacactg ctgtgccct cggcagtggc 1000

actggtcctt tttctaatac ttgcttatat catgtgctgc cgacgggaag 1050

gcgtggaaaa gagaaacatg caaacaccag acatccaact ggtccatcac 1100

agtgctattc agaaatctac caaggagctt cgagacatgt ccaagaatag 1150

agagatagca tggcccctgt caacgcttcc tgtgttccac cctgtgactg 1200

gggaaatcat acctccttta cacacagaca actatgatag cacaaacatg 1250

ccattgatgc aaacgcagca gaacttgcca catcagactc agattcccca 1300

acagcagact acaggtaaat ggtatccctg aagaaagaaa actgactgaa 1350

gcaatgaatt tataatcaga caatatagca gttacatcac atttctttc 1400

tcttccaata atgcatgagc ttttctggca tatgttatgc atgttggcag 1450

tattaagtgt ataccaaata atacaacata actttcattt tactaatgta 1500

ttttttgta cttaaagcat ttttgacaat ttgtaaaaca ttgatgactt 1550

tatatttgtt acaataaaag ttgatcttta aaataaatat tattaatgaa 1600

gcctaaaaaa aaaaa 1615
```

```
<210> 102
<211> 437
<212> PRT
<213> Homosapiens

<400> 102
```

```
Met Gln Leu Pro Arg Trp Trp Glu Leu Gly Asp Pro Cys Ala Trp
 1               5                  10                  15

Thr Gly Gln Gly Arg Gly Thr Arg Arg Met Ser Pro Ala Thr Thr
                20                  25                  30

Gly Thr Phe Leu Leu Thr Val Tyr Ser Ile Phe Ser Lys Val His
                35                  40                  45

Ser Asp Arg Asn Val Tyr Pro Ser Ala Gly Val Leu Phe Val His
                50                  55                  60

Val Leu Glu Arg Glu Tyr Phe Lys Gly Glu Phe Pro Pro Tyr Pro
                65                  70                  75

Lys Pro Gly Glu Ile Ser Asn Asp Pro Ile Thr Phe Asn Thr Asn
                80                  85                  90

Leu Met Gly Tyr Pro Asp Arg Pro Gly Trp Leu Arg Tyr Ile Gln
                95                  100                 105

Arg Thr Pro Tyr Ser Asp Gly Val Leu Tyr Gly Ser Pro Thr Ala
                110                 115                 120
```

140

Glu Asn Val Gly Lys Pro Thr Ile Ile Glu Ile Thr Ala Tyr Asn
                125                 130                 135

Arg Arg Thr Phe Glu Thr Ala Arg His Asn Leu Ile Ile Asn Ile
                140                 145                 150

Met Ser Ala Glu Asp Phe Pro Leu Pro Tyr Gln Ala Glu Phe Phe
                155                 160                 165

Ile Lys Asn Met Asn Val Glu Glu Met Leu Ala Ser Glu Val Leu
                170                 175                 180

Gly Asp Phe Leu Gly Ala Val Lys Asn Val Trp Gln Pro Glu Arg
                185                 190                 195

Leu Asn Ala Ile Asn Ile Thr Ser Ala Leu Asp Arg Gly Gly Arg
                200                 205                 210

Val Pro Leu Pro Ile Asn Asp Leu Lys Glu Gly Val Tyr Val Met
                215                 220                 225

Val Gly Ala Asp Val Pro Phe Ser Ser Cys Leu Arg Glu Val Glu
                230                 235                 240

Asn Pro Gln Asn Gln Leu Arg Cys Ser Gln Glu Met Glu Pro Val
                245                 250                 255

Ile Thr Cys Asp Lys Lys Phe Arg Thr Gln Phe Tyr Ile Asp Trp
                260                 265                 270

Cys Lys Ile Ser Leu Val Asp Lys Thr Lys Gln Val Ser Thr Tyr
                275                 280                 285

Gln Glu Val Ile Arg Gly Glu Gly Ile Leu Pro Asp Gly Gly Glu
                290                 295                 300

Tyr Lys Pro Pro Ser Asp Ser Leu Lys Ser Arg Asp Tyr Tyr Thr
                305                 310                 315

Asp Phe Leu Ile Thr Leu Ala Val Pro Ser Ala Val Ala Leu Val
                320                 325                 330

Leu Phe Leu Ile Leu Ala Tyr Ile Met Cys Cys Arg Arg Glu Gly
                335                 340                 345

Val Glu Lys Arg Asn Met Gln Thr Pro Asp Ile Gln Leu Val His
                350                 355                 360

His Ser Ala Ile Gln Lys Ser Thr Lys Glu Leu Arg Asp Met Ser
                365                 370                 375

Lys Asn Arg Glu Ile Ala Trp Pro Leu Ser Thr Leu Pro Val Phe
                380                 385                 390

His Pro Val Thr Gly Glu Ile Ile Pro Pro Leu His Thr Asp Asn
                395                 400                 405

Tyr Asp Ser Thr Asn Met Pro Leu Met Gln Thr Gln Gln Asn Leu
                410                 415                 420

Pro His Gln Thr Gln Ile Pro Gln Gln Gln Thr Thr Gly Lys Trp
                425                 430                 435

141

Tyr Pro

<210> 103
<211> 1621
<212> DNA
<213> Homosapiens

<400> 103
cagaagaggg ggctagctag ctgtctctgc ggaccaggga gaccccgcg 50

ccccccggt gtgaggcggc ctcacagggc cgggtgggct ggcgagccga 100

cgcggcggcg gaggaggctg tgaggagtgt gtggaacagg acccgggaca 150

gaggaaccat ggctccgcag aacctgagca ccttttgcct gttgctgcta 200

tacctcatcg gggcggtgat tgccggacga gatttctata agatcttggg 250

ggtgcctcga agtgcctcta taaaggatat taaaaaggcc tataggaaac 300

tagccctgca gcttcatccc gaccggaacc ctgatgatcc acaagcccag 350

gagaaattcc aggatctggg tgctgcttat gaggttctgt cagatagtga 400

gaaacggaaa cagtacgata cttatggtga agaaggatta aaagatggtc 450

atcagagctc ccatggagac attttttcac acttctttgg ggattttggt 500

ttcatgtttg gaggaacccc tcgtcagcaa gacagaaata ttccaagagg 550

aagtgatatt attgtagatc tagaagtcac tttggaagaa gtatatgcag 600

gaaattttgt ggaagtagtt agaaacaaac ctgtggcaag gcaggctcct 650

ggcaaacgga agtgcaattg tcggcaagag atgcggacca cccagctggg 700

ccctgggcgc ttccaaatga cccaggaggt ggtctgcgac gaatgcccta 750

atgtcaaact agtgaatgaa gaacgaacgc tggaagtaga aatagagcct 800

ggggtgagag acggcatgga gtaccccttt attggagaag gtgagcctca 850

cgtggatggg gagcctggag atttacggtt ccgaatcaaa gttgtcaagc 900

acccaatatt tgaaaggaga ggagatgatt tgtacacaaa tgtgacaatc 950

tcattagttg agtcactggt tggctttgag atggatatta ctcacttgga 1000

tggtcacaag gtacatattt cccgggataa gatcaccagg ccaggagcga 1050

agctatggaa gaaagggaa gggctcccca actttgacaa caacaatatc 1100

aagggctctt tgataatcac ttttgatgtg gatttccaa agaacagtt 1150

aacagaggaa gcgagagaag gtatcaaaca gctactgaaa caagggtcag 1200

tgcagaaggt atacaatgga ctgcaaggat attgagagtg aataaaattg 1250

gactttgttt aaaataagtg aataagcgat atttattatc tgcaaggttt 1300

ttttgtgtgt gttttttgttt ttattttcaa tatgcaagtt aggcttaatt 1350

142

tttttatcta atgatcatca tgaaatgaat aagagggctt aagaatttgt 1400

ccatttgcat tcggaaaaga atgaccagca aaaggtttac taatacctct 1450

ccctttgggg atttaatgtc tggtgctgcc gcctgagttt caagaattaa 1500

agctgcaaga ggactccagg agcaaaagaa acacaatata gagggttgga 1550

gttgttagca atttcattca aaatgccaac tggagaagtc tgtttttaaa 1600

tacattttgt tgttattttt a 1621

<210> 104
<211> 358
<212> PRT
<213> Homosapiens

<400> 104

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Met | Ala | Pro | Gln | Asn | Leu | Ser | Thr | Phe | Cys | Leu | Leu | Leu | Leu | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

Leu Ile Gly Ala Val Ile Ala Gly Arg Asp Phe Tyr Lys Ile Leu
          20                   25                        30

Gly Val Pro Arg Ser Ala Ser Ile Lys Asp Ile Lys Lys Ala Tyr
               35                   40                        45

Arg Lys Leu Ala Leu Gln Leu His Pro Asp Arg Asn Pro Asp Asp
                    50                   55                        60

Pro Gln Ala Gln Glu Lys Phe Gln Asp Leu Gly Ala Ala Tyr Glu
                         65                   70                        75

Val Leu Ser Asp Ser Glu Lys Arg Lys Gln Tyr Asp Thr Tyr Gly
                    80                   85                        90

Glu Glu Gly Leu Lys Asp Gly His Gln Ser Ser His Gly Asp Ile
                    95                   100                       105

Phe Ser His Phe Phe Gly Asp Phe Gly Phe Met Phe Gly Gly Thr
                    110                  115                       120

Pro Arg Gln Gln Asp Arg Asn Ile Pro Arg Gly Ser Asp Ile Ile
                    125                  130                       135

Val Asp Leu Glu Val Thr Leu Glu Glu Val Tyr Ala Gly Asn Phe
                    140                  145                       150

Val Glu Val Val Arg Asn Lys Pro Val Ala Arg Gln Ala Pro Gly
                    155                  160                       165

Lys Arg Lys Cys Asn Cys Arg Gln Glu Met Arg Thr Thr Gln Leu
                    170                  175                       180

Gly Pro Gly Arg Phe Gln Met Thr Gln Glu Val Val Cys Asp Glu
                    185                  190                       195

Cys Pro Asn Val Lys Leu Val Asn Glu Glu Arg Thr Leu Glu Val
                    200                  205                       210

Glu Ile Glu Pro Gly Val Arg Asp Gly Met Glu Tyr Pro Phe Ile
                    215                  220                       225

143

```
Gly Glu Gly Glu Pro His Val Asp Gly Glu Pro Gly Asp Leu Arg
            230                 235                 240

Phe Arg Ile Lys Val Val Lys His Pro Ile Phe Glu Arg Arg Gly
            245                 250                 255

Asp Asp Leu Tyr Thr Asn Val Thr Ile Ser Leu Val Glu Ser Leu
            260                 265                 270

Val Gly Phe Glu Met Asp Ile Thr His Leu Asp Gly His Lys Val
            275                 280                 285

His Ile Ser Arg Asp Lys Ile Thr Arg Pro Gly Ala Lys Leu Trp
            290                 295                 300

Lys Lys Gly Glu Gly Leu Pro Asn Phe Asp Asn Asn Asn Ile Lys
            305                 310                 315

Gly Ser Leu Ile Ile Thr Phe Asp Val Asp Phe Pro Lys Glu Gln
            320                 325                 330

Leu Thr Glu Glu Ala Arg Glu Gly Ile Lys Gln Leu Leu Lys Gln
            335                 340                 345

Gly Ser Val Gln Lys Val Tyr Asn Gly Leu Gln Gly Tyr
            350                 355
```

```
<210> 105
<211> 1532
<212> DNA
<213> Homosapiens

<400> 105
 ggcacgaggc ggcggggcag tcgcgggatg cgcccgggag ccacagcctg 50

 aggccctcag gtctctgcag gtgtcgtgga ggaacctagc acctgccatc 100

 ctcttcccca atttgccact tccagcagct ttagcccatg aggaggatgt 150

 gaccgggact gagtcaggag ccctctggaa gcatggagac tgtggtgatt 200

 gttgccatag gtgtgctggc caccatcttt ctggcttcgt ttgcagcctt 250

 ggtgctggtt tgcaggcagc gctactgccg gccgcgagac ctgctgcagc 300

 gctatgattc taagcccatt gtggacctca ttggtgccat ggagacccag 350

 tctgagccct ctgagttaga actggacgat gtcgttatca ccaacccca 400

 cattgaggcc attctggaga atgaagactg gatcgaagat gcctcgggtc 450

 tcatgtccca ctgcattgcc atcttgaaga tttgtcacac tctgacagag 500

 aagcttgttg ccatgacaat gggctctggg gccaagatga gacttcagc 550

 cagtgtcagc gacatcattg tggtggccaa gcggatcagc cccagggtgg 600

 atgatgttgt gaagtcgatg taccctccgt tggaccccaa actcctggac 650

 gcacggacga ctgccctgct cctgtctgtc agtcacctgg tgctggtgac 700

 aaggaatgcc tgccatctga cgggaggcct ggactggatt gaccagtctc 750
```

```
tgtcggctgc tgaggagcat ttggaagtcc ttcgagaagc agccctagct 800

tctgagccag ataaaggcct cccaggccct gaaggcttcc tgcaggagca 850

gtctgcaatt tagtgcctac aggccagcag ctagccatga aggcccctgc 900

cgccatccct ggatggctca gcttagcctt ctactttttc ctatagagtt 950

agttgttctc cacggctgga gagttcagct gtgtgtgcat agtaaagcag 1000

gagatccccg tcagtttatg cctcttttgc agttgcaaac tgtggctggt 1050

gagtggcagt ctaatactac agttagggga gatgccattc actctctgca 1100

agaggagtat tgaaaactgg tggactgtca gctttattta gctcacctag 1150

tgttttcaag aaaattgagc caccgtctaa gaaatcaaga ggtttcacat 1200

taaaattaga atttctggcc tctctcgatc ggtcagaatg tgtggcaatt 1250

ctgatctgca ttttcagaag aggacaatca attgaaacta agtaggggtt 1300

tcttcttttg gcaagacttg tactctctca cctggcctgt ttcatttatt 1350

tgtattatct gcctggtccc tgaggcgtct gggtctctcc tctcccttgc 1400

aggtttgggt ttgaagctga ggaactacaa agttgatgat ttctttttta 1450

tctttatgcc tgcaatttta cctagctacc actaggtgga tagtaaattt 1500

atacttatgt ttccctcaaa aaaaaaaaaa aa 1532
```

<210> 106
<211> 226
<212> PRT
<213> Homosapiens

<400> 106

```
Met Glu Thr Val Val Ile Val Ala Ile Gly Val Leu Ala Thr Ile
 1               5                  10                   15

Phe Leu Ala Ser Phe Ala Ala Leu Val Leu Val Cys Arg Gln Arg
                20                  25                   30

Tyr Cys Arg Pro Arg Asp Leu Leu Gln Arg Tyr Asp Ser Lys Pro
                35                  40                   45

Ile Val Asp Leu Ile Gly Ala Met Glu Thr Gln Ser Glu Pro Ser
                50                  55                   60

Glu Leu Glu Leu Asp Asp Val Val Ile Thr Asn Pro His Ile Glu
                65                  70                   75

Ala Ile Leu Glu Asn Glu Asp Trp Ile Glu Asp Ala Ser Gly Leu
                80                  85                   90


Met Ser His Cys Ile Ala Ile Leu Lys Ile Cys His Thr Leu Thr
                95                 100                  105

Glu Lys Leu Val Ala Met Thr Met Gly Ser Gly Ala Lys Met Lys
                110                 115                  120
```

```
Thr Ser Ala Ser Val Ser Asp Ile Ile Val Val Ala Lys Arg Ile
            125             130             135

Ser Pro Arg Val Asp Asp Val Val Lys Ser Met Tyr Pro Pro Leu
            140             145             150

Asp Pro Lys Leu Leu Asp Ala Arg Thr Thr Ala Leu Leu Leu Ser
            155             160             165

Val Ser His Leu Val Leu Val Thr Arg Asn Ala Cys His Leu Thr
            170             175             180

Gly Gly Leu Asp Trp Ile Asp Gln Ser Leu Ser Ala Ala Glu Glu
            185             190             195

His Leu Glu Val Leu Arg Glu Ala Ala Leu Ala Ser Glu Pro Asp
            200             205             210

Lys Gly Leu Pro Gly Pro Glu Gly Phe Leu Gln Glu Gln Ser Ala
            215             220             225

Ile
```

<210> 107
<211> 1027
<212> DNA
<213> Homosapiens

<220>
<221> unsure
<222> 1017, 1020
<223> unknown base

<400> 107
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gcttcatttc tcccgactca gcttcccacc ctgggctttc cgaggtgctt 50

tcgccgctgt ccccaccact gcagccatga tctccttaac ggacacgcag 100

aaaattggaa tgggattaac aggatttgga gtgttttttcc tgttctttgg 150

aatgattctc tttttgaca aagcactact ggctattgga aatgttttat 200

ttgtagccgg cttggctttt gtaattggtt tagaaagaac attcagattc 250

ttcttccaaa aacataaaat gaaagctaca ggttttttc tgggtggtgt 300

atttgtagtc cttattggtt ggcctttgat aggcatgatc ttcgaaattt 350

atggattttt tctcttgttc aggggcttct ttcctgtcgt tgttggcttt 400

attagaagag tgccagtcct tggatccctc ctaaatttac ctggaattag 450

atcatttgta gataaagttg gagaaagcaa caatatggta taacaacaag 500

tgaatttgaa gactcattta aaatattgtg ttatttataa agtcatttga 550

agaatattca gcacaaaatt aaattacatg aaatagcttg taatgttctt 600

tacaggagtt taaaacgtat agcctacaaa gtaccagcag caaattagca 650

aagaagcagt gaaaacaggc ttctactcaa gtgaactaag aagaagtcag 700
```

```
caagcaaact gagagaggtg aaatccatgt taatgatgct taagaaactc 750

ttgaaggcta tttgtgttgt ttttccacaa tgtgcgaaac tcagccatcc 800

ttagagaact gtggtgcctg tttcttttct ttttattttg aaggctcagg 850

agcatccata ggcatttgct ttttagaagt gtccactgca atggcaaaaa 900

tatttccagt tgcactgtat ctctggaagt gatgcatgaa ttcgattgga 950

ttgtgtcatt ttaaagtatt aaaaccaagg aaacccaat tttgatgtat 1000

ggattacttt tttttgngcn cagggcc 1027
```

<210> 108
<211> 138
<212> PRT
<213> Homosapiens

<400> 108
```
Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr
 1               5                  10                  15

Gly Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu`Phe Phe
                20                  25                  30

Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly
                35                  40                  45

Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe
                50                  55                  60

Gln Lys His Lys Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val
                65                  70                  75

Phe Val Val Leu Ile Gly Trp Pro Leu Ile Gly Met Ile Phe Glu
                80                  85                  90

Ile Tyr Gly Phe Phe Leu Leu Phe Arg Gly Phe Phe Pro Val Val
                95                 100                 105

Val Gly Phe Ile Arg Arg Val Pro Val Leu Gly Ser Leu Leu Asn
               110                 115                 120

Leu Pro Gly Ile Arg Ser Phe Val Asp Lys Val Gly Glu Ser Asn
               125                 130                 135

Asn Met Val
```

<210> 109
<211> 550
<212> DNA
<213> Homosapiens

<400> 109
```
ccagtctgtc gccacctcac ttggtgtctg ctgtccccgc caggcaagcc 50

tggggtgaga gcacagagga gtgggccggg accatgcggg ggacgcggct 100

ggcgctcctg gcgctggtgc tggctgcctg cggagagctg gcgccggccc 150

tgcgctgcta cgtctgtccg gagcccacag gagtgtcgga ctgtgtcacc 200
```

147

```
atcgccacct gcaccaccaa cgaaaccatg tgcaagacca cactctactc 250

ccgggagata gtgtacccct tccaggggga ctccacggtg accaagtcct 300

gtgccagcaa gtgtaagccc tcggatgtgg atggcatcgg ccagaccctg 350

cccgtgtcct gctgcaatac tgagctgtgc aatgtagacg gggcgcccgc 400

tctgaacagc ctccactgcg gggccctcac gctcctccca ctcttgagcc 450

tccgactgta gagtccccgc ccaccccccat ggccctatgc ggcccagccc 500

cgaatgcctt gaagaagtgc ccctgcacc aggaaaaaaa aaaaaaaaaa 550
```

```
<210> 110
<211> 125
<212> PRT
<213> Homosapiens

<400> 110
 Met Arg Gly Thr Arg Leu Ala Leu Leu Ala Leu Val Leu Ala Ala
   1               5                  10                  15

 Cys Gly Glu Leu Ala Pro Ala Leu Arg Cys Tyr Val Cys Pro Glu
                  20              `   25                  30

 Pro Thr Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr
                  35                  40                  45

 Asn Glu Thr Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val
                  50                  55                  60

 Tyr Pro Phe Gln Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser
                  65                  70                  75

 Lys Cys Lys Pro Ser Asp Val Asp Gly Ile Gly Gln Thr Leu Pro
                  80                  85                 ·90

 Val Ser Cys Cys Asn Thr Glu Leu Cys Asn Val Asp Gly Ala Pro
                  95                 100                 105

 Ala Leu Asn Ser Leu His Cys Gly Ala Leu Thr Leu Leu Pro Leu
                 110                 115                 120

 Leu Ser Leu Arg Leu
                 125

<210> 111
<211> 2368
<212> DNA
<213> Homosapiens

<400> 111
 gcgccgccag gcgtaggcgg ggtggccctt gcgtctcccg cttccttgaa 50

 aaacccggcg ggcgagcgag ctgcgggcc ggccgctgcc cttccccaca 100

 ctccccgccg agaagcctcg ctcggcgccc aacatggcgg gtgggcgctg 150

 cggcccgcag ctaacggcgc tcctggccgc ctggatcgcg gctgtggcgg 200

 cgacggcagg ccccgaggag gccgcgctgc cgccggagca gagccgggtc 250
```

148

```
cagcccatga  ccgcctccaa  ctggacgctg  gtgatggagg  gcgagtggat  300

gctgaaattt  tacgccccat  ggtgtccatc  ctgccagcag  actgattcag  350

aatgggaggc  ttttgcaaag  aatggtgaaa  tacttcagat  cagtgtgggg  400

aaggtagatg  tcattcaaga  accaggtttg  agtggccgct  tctttgtcac  450

cactctccca  gcattttttc  atgcaaagga  tgggatattc  cgccgttatc  500

gtggcccagg  aatcttcgaa  gacctgcaga  attatatctt  agagaagaaa  550

tggcaatcag  tcgagcctct  gactggctgg  aaatccccag  cttctctaac  600

gatgtctgga  atggctggtc  ttttttagcat ctctggcaag  atatggcatc  650

ttcacaacta  tttcacagtg  actcttggaa  ttcctgcttg  gtgttcttat  700

gtgtttttcg  tcatagccac  cttggttttt  ggcctttta  tgggtctggt  750

cttggtggta  atatcagaat  gtttctatgt  gccacttcca  aggcatttat  800

ctgagcgttc  tgagcagaat  cggagatcag  aggaggctca  tagagctgaa  850

cagttgcagg  atgcggagga  ggaaaaagat  gattcaaatg  aagaagaaa  900

caaagacagc  cttgtagatg  atgaagaaga  gaaagaagat  cttggcgatg  950

aggatgaagc  agaggaagaa  gaggaggagg  acaacttggc  tgctggtgtg  1000

gatgaggaga  gaagtgaggc  caatgatcag  gggcccccag  gagaggacgg  1050

tgtgacccgg  gaggaagtag  agcctgagga  ggctgaagaa  ggcatctctg  1100

agcaaccctg  cccagctgac  acagaggtgg  tggaagactc  cttgaggcag  1150

cgtaaaagtc  agcatgctga  caagggactg  tagatttaat  gatgcgtttt  1200

caagaataca  caccaaaaca  atatgtcagc  ttccctttgg  cctgcagttt  1250

gtaccaaatc  cttaattttt  cctgaatgag  caagcttctc  ttaaaagatg  1300

ctctctagtc  atttggtctc  atggcagtaa  gcctcatgta  tactaaggag  1350

agtcttccag  gtgtgacaat  caggatatag  aaaaacaaac  gtagtgttgg  1400

gatctgtttg  gagactggga  tgggaacaag  ttcatttact  tagggtcag   1450

agagtctcga  ccagaggagg  ccattcccag  tcctaatcag  caccttccag  1500

agacaaggct  gcaggccctg  tgaaatgaaa  gccaagcagg  agccttggct  1550

cctgagcatc  cccaaagtgt  aacgtagaag  ccttgcatcc  ttttcttgtg  1600

taaagtattt  atttttgtca  aattgcagga  aacatcaggc  accacagtgc  1650

atgaaaaatc  tttcacagct  agaaattgaa  agggccttgg  gtatagagag  1700

cagctcagaa  gtcatcccag  ccctctgaat  ctcctgtgct  atgtttttatt 1750

tcttaccttt  aatttttcca  gcatttccac  catgggcatt  caggctctcc  1800

acactcttca  ctattatctc  ttggtcagag  gactccaata  acagccaggt  1850
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149

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ttacatgaac tgtgtttgtt cattctgacc taaggggttt agataatcag 1900

taaccataac ccctgaagct gtgactgcca aacatctcaa atgaaatgtt 1950

gtggccatca gagactcaaa aggaagtaag gattttacaa gacagattaa 2000

aaaaaaattg ttttgtccaa aatatagttg ttgttgattt tttttttaagt 2050

tttctaagca atattttca agccagaagt cctctaagtc ttgccagtac 2100

aaggtagtct tgtgaagaaa agttgaatac tgttttgttt tcatctcaag 2150

gggttccctg ggtcttgaac tactttaata ataactaaaa aaccacttct 2200

gattttcctt cagtgatgtg cttttggtga aagaattaat gaactccagt 2250

acctgaaagt gaaagatttg attttgtttc catcttctgt aatcttccaa 2300

agaattatat ctttgtaaat ctctcaatac tcaatctact gtaagtaccc 2350

agggaggcta atttctttt 2368
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<210> 112
<211> 349
<212> PRT
<213> Homosapiens

<400> 112

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Met Ala Gly Gly Arg Cys Gly Pro Gln Leu Thr Ala Leu Leu Ala
 1               5                   10                  15

Ala Trp Ile Ala Ala Val Ala Ala Thr Ala Gly Pro Glu Glu Ala
                20                  25                  30

Ala Leu Pro Pro Glu Gln Ser Arg Val Gln Pro Met Thr Ala Ser
                35                  40                  45

Asn Trp Thr Leu Val Met Glu Gly Glu Trp Met Leu Lys Phe Tyr
                50                  55                  60

Ala Pro Trp Cys Pro Ser Cys Gln Gln Thr Asp Ser Glu Trp Glu
                65                  70                  75

Ala Phe Ala Lys Asn Gly Glu Ile Leu Gln Ile Ser Val Gly Lys
                80                  85                  90

Val Asp Val Ile Gln Glu Pro Gly Leu Ser Gly Arg Phe Phe Val
                95                  100                 105

Thr Thr Leu Pro Ala Phe Phe His Ala Lys Asp Gly Ile Phe Arg
                110                 115                 120

Arg Tyr Arg Gly Pro Gly Ile Phe Glu Asp Leu Gln Asn Tyr Ile
                125                 130                 135

Leu Glu Lys Lys Trp Gln Ser Val Glu Pro Leu Thr Gly Trp Lys
                140                 145                 150

Ser Pro Ala Ser Leu Thr Met Ser Gly Met Ala Gly Leu Phe Ser
                155                 160                 165

Ile Ser Gly Lys Ile Trp His Leu His Asn Tyr Phe Thr Val Thr
                170                 175                 180
```

Leu Gly Ile Pro Ala Trp Cys Ser Tyr Val Phe Phe Val Ile Ala
            185             190             195

Thr Leu Val Phe Gly Leu Phe Met Gly Leu Val Leu Val Val Ile
            200             205             210

Ser Glu Cys Phe Tyr Val Pro Leu Pro Arg His Leu Ser Glu Arg
            215             220             225

Ser Glu Gln Asn Arg Arg Ser Glu Glu Ala His Arg Ala Glu Gln
            230             235             240

Leu Gln Asp Ala Glu Glu Glu Lys Asp Asp Ser Asn Glu Glu Glu
            245             250             255

Asn Lys Asp Ser Leu Val Asp Asp Glu Glu Glu Lys Glu Asp Leu
            260             265             270

Gly Asp Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu Asp Asn Leu
            275             280             285

Ala Ala Gly Val Asp Glu Glu Arg Ser Glu Ala Asn Asp Gln Gly
            290             295             300

Pro Pro Gly Glu Asp Gly Val Thr Arg Glu Glu Val Glu Pro Glu
            305             310             315

Glu Ala Glu Glu Gly Ile Ser Glu Gln Pro Cys Pro Ala Asp Thr
            320             325             330

Glu Val Val Glu Asp Ser Leu Arg Gln Arg Lys Ser Gln His Ala
            335             340             345

Asp Lys Gly Leu

<210> 113
<211> 4040
<212> DNA
<213> Homosapiens

<400> 113
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 gggtttgagg atggggggagt agctacagga agcgaccccg cgatggcaag 200

 gtatattttt gtggaatgaa aaggaagtat tagaaatgag ctgaagacca 250

 ttcacagatt aatattttttg gggacagatt tgtgatgctt gattcaccct 300

 tgaagtaatg tagacagaag ttctcaaatt tgcatattac atcaactgga 350

 accagcagtg aatcttaatg ttcacttaaa tcagaacttg cataagaaag 400

 agaatgggag tctggttaaa taaagatgac tatatcagag acttgaaaag 450

 gatcattctc tgttttctga tagtgtatat ggccatttta gtgggcacag 500

 atcaggattt ttacagttta cttggagtgt ccaaaactgc aagcagtaga 550

151

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gaaataagac aagctttcaa gaaattggca ttgaagttac atcctgataa 600

aaacccgaat aacccaaatg cacatggcga tttttaaaa ataaatagag 650

catatgaagt actcaaagat gaagatctac ggaaaaagta tgacaaatat 700

ggagaaaagg gacttgagga taatcaaggt ggccagtatg aaagctggaa 750

ctattatcgt tatgattttg gtatttatga tgatgatcct gaaatcataa 800

cattggaaag aagagaattt gatgctgctg ttaattctgg agaactgtgg 850

tttgtaaatt tttactcccc aggctgttca cactgccatg atttagctcc 900

cacatggaga gactttgcta aagaagtgga tgggttactt cgaattggag 950

ctgttaactg tggtgatgat agaatgcttt gccgaatgaa aggagtcaac 1000

agctatccca gtctcttcat ttttcggtct ggaatggccc cagtgaaata 1050

tcatggagac agatcaaagg agagtttagt gagtttttgca atgcagcatg 1100

ttagaagtac agtgacagaa ctttggacag gaaattttgt caactccata 1150

caaactgctt ttgctgctgg tattggctgg ctgatcactt tttgttcaaa 1200

aggaggagat tgtttgactt cacagacacg actcaggctt agtggcatgt 1250

tgtttctcaa ctcattggat gctaaagaaa tatatttgga agtaatacat 1300

aatcttccag attttgaact actttcggca aacacactag aggatcgttt 1350

ggctcatcat cggtggctgt tattttttca ttttggaaaa aatgaaaatt 1400

caaatgatcc tgagctgaaa aaactaaaaa ctctacttaa aaatgatcat 1450

attcaagttg gcaggtttga ctgttcctct gcaccagaca tctgtagtaa 1500

tctgtatgtt tttcagccgt ctctagcagt atttaaagga caaggaacca 1550

aagaatatga aattcatcat ggaaagaaga ttctatatga tatacttgcc 1600

tttgccaaag aaagtgtgaa ttctcatgtt accacgcttg gacctcaaaa 1650

ttttcctgcc aatgacaaag aaccatggct tgttgatttc tttgccccct 1700

ggtgtccacc atgtcgagct ttactaccag agttacgaag agcatcaaat 1750

cttctttatg gtcagcttaa gtttggtaca ctagattgta cagttcatga 1800

gggactctgt aacatgtata acattcaggc ttatccaaca acagtggtat 1850

tcaaccagtc caacattcat gagtatgaag gacatcactc tgctgaacaa 1900

atcttggagt tcatagagga tcttatgaat ccttcagtgg tctcccttac 1950

acccaccacc ttcaacgaac tagttacaca aagaaaacac aacgaagtct 2000

ggatggttga tttctattct ccgtggtgtc atccttgcca agtcttaatg 2050

ccagaatgga aaagaatggc ccggacatta actggactga tcaacgtggg 2100

cagtatagat tgccaacagt atcattcttt ttgtgcccag gaaaacgttc 2150
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aaagataccc tgagataaga ttttttcccc caaaatcaaa taaagcttat 2200

cagtatcaca gttacaatgg ttggaatagg gatgcttatt ccctgagaat 2250

ctggggtcta ggattttac ctcaagtatc cacagatcta acacctcaga 2300

ctttcagtga aaaagttcta caagggaaaa atcattgggt gattgatttc 2350

tatgctcctt ggtgtggacc ttgccagaat tttgctccag aatttgagct 2400

cttggctagg atgattaaag gaaaagtgaa agctggaaaa gtagactgtc 2450

aggcttatgc tcagacatgc cagaaagctg ggatcagggc ctatccaact 2500

gttaagtttt atttctacga aagagcaaag agaaattttc aagaagagca 2550

gataaatacc agagatgcaa aagcaatcgc tgccttaata agtgaaaaat 2600

tggaaactct ccgaaatcaa ggcaagagga ataaggatga actttgataa 2650

tgttgaagat gaagaaaaag tttaaaagaa attctgacag atgacatcag 2700

aagacaccta tttagaatgt tacatttatg atgggaatga atgaacatta 2750

tcttagactt gcagttgtac tgccagaatt atctacagca ctggtgtaaa 2800

agaagggtct gcaaactttt tctgtaaagg gccggtttat aaatatttta 2850

gactttgcag gctataatat atggttcaca catgagaaca agaatagagt 2900

catcatgtat tctttgttat ttgcttttaa caacctttaa aaaatattaa 2950

aacgattctt agctcagagc catacaaaag taggctggat tcagtccatg 3000

gaccatagat tgctgtcccc ctcgacggac ttataatgtt tcaggtggct 3050

ggcttgaaca tgagtctgct gtgctatcta cataaatgtc taagttgtat 3100

aaagtccact ttcccttcac gttttttggc tgacctgaaa agaggtaact 3150

tagttttgg tcacttgttc tcctaaaaat gctatcccta accatatatt 3200

tatatttcgt tttaaaaaca cccatgatgt ggcacagtaa acaaaccctg 3250

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aaggttgaaa aaatgctttt aatttttcac agccgagaaa cagtgcagca 3350

gtatatgtgc acacagtaag tacacaaatt tgagcaacag taagtgcaca 3400

aattctgtag tttgctgtat catccaggaa aacctgaggg aaaaaaatta 3450

tagcaattaa ctgggcattg tagagtatcc taaatatgtt atcaagtatt 3500

tagagttcta tattttaaag atatatgtgt tcatgtattt tctgaaattg 3550

ctttcataga aatttttccca ctgatagttg attttttgagg catctaatat 3600

ttacatattt gccttctgaa ctttgttttg acctgtatcc tttatttaca 3650

ttgggttttt ctttcatagt tttggttttt cactcctgtc cagtctattt 3700

attattcaaa taggaaaaat tactttacag gttgttttac tgtagcttat 3750
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153

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aatgatactg tagttattcc agttactagt ttactgtcag agggctgcct 3800

ttttcagata aatattgaca taataactga agttatttttt ataagaaaat 3850

caagtatata aatctaggaa agggatcttc tagtttctgt gttgtttaga 3900

ctcaaagaat cacaaatttg tcagtaacat gtagttgttt agttataatt 3950

cagagtgtac agaatggtaa aaattccaat cagtcaaaag aggtcaatga 4000

attaaaaggc ttgcaacttt ttcaaaaaaa aaaaaaaaaa 4040
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<210> 114
<211> 747
<212> PRT
<213> Homosapiens

<400> 114

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Met Gly Val Trp Leu Asn Lys Asp Asp Tyr Ile Arg Asp Leu Lys
  1               5                   10                  15

Arg Ile Ile Leu Cys Phe Leu Ile Val Tyr Met Ala Ile Leu Val
                 20                  25                  30

Gly Thr Asp Gln Asp Phe Tyr Ser Leu Leu Gly Val Ser Lys Thr
                 35                  40                  45

Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu
                 50                  55                  60

Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly
                 65                  70                  75

Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu
                 80                  85                  90

Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu
                 95                  100                 105

Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr
                 110                 115                 120

Asp Phe Gly Ile Tyr Asp Asp Asp Pro Glu Ile Ile Thr Leu Glu
                 125                 130                 135

Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe
                 140                 145                 150

Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala
                 155                 160                 165

Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg
                 170                 175                 180

Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met
                 185                 190                 195

Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly
                 200                 205                 210

Met Ala Pro Val Lys Tyr His Gly Asp Arg Ser Lys Glu Ser Leu
                 215                 220                 225
```

154

```
Val Ser Phe Ala Met Gln His Val Arg Ser Thr Val Thr Glu Leu
                230                 235                 240

Trp Thr Gly Asn Phe Val Asn Ser Ile Gln Thr Ala Phe Ala Ala
                245                 250                 255

Gly Ile Gly Trp Leu Ile Thr Phe Cys Ser Lys Gly Gly Asp Cys
                260                 265                 270

Leu Thr Ser Gln Thr Arg Leu Arg Leu Ser Gly Met Leu Phe Leu
                275                 280                 285

Asn Ser Leu Asp Ala Lys Glu Ile Tyr Leu Glu Val Ile His Asn
                290                 295                 300

Leu Pro Asp Phe Glu Leu Leu Ser Ala Asn Thr Leu Glu Asp Arg
                305                 310                 315

Leu Ala His His Arg Trp Leu Leu Phe Phe His Phe Gly Lys Asn
                320                 325                 330

Glu Asn Ser Asn Asp Pro Glu Leu Lys Lys Leu Lys Thr Leu Leu
                335                 340                 345

Lys Asn Asp His Ile Gln Val Gly Arg Phe Asp Cys Ser Ser Ala
                350                 355                 360

Pro Asp Ile Cys Ser Asn Leu Tyr Val Phe Gln Pro Ser Leu Ala
                365                 370                 375

Val Phe Lys Gly Gln Gly Thr Lys Glu Tyr Glu Ile His His Gly
                380                 385                 390

Lys Lys Ile Leu Tyr Asp Ile Leu Ala Phe Ala Lys Glu Ser Val
                395                 400                 405

Asn Ser His Val Thr Thr Leu Gly Pro Gln Asn Phe Pro Ala Asn
                410                 415                 420

Asp Lys Glu Pro Trp Leu Val Asp Phe Phe Ala Pro Trp Cys Pro
                425                 430                 435

Pro Cys Arg Ala Leu Leu Pro Glu Leu Arg Arg Ala Ser Asn Leu
                440                 445                 450

Leu Tyr Gly Gln Leu Lys Phe Gly Thr Leu Asp Cys Thr Val His
                455                 460                 465

Glu Gly Leu Cys Asn Met Tyr Asn Ile Gln Ala Tyr Pro Thr Thr
                470                 475                 480

Val Val Phe Asn Gln Ser Asn Ile His Glu Tyr Glu Gly His His
                485                 490                 495

Ser Ala Glu Gln Ile Leu Glu Phe Ile Glu Asp Leu Met Asn Pro
     ·          500                 505                 510

Ser Val Val Ser Leu Thr Pro Thr Thr Phe Asn Glu Leu Val Thr
                515                 520                 525

Gln Arg Lys His Asn Glu Val Trp Met Val Asp Phe Tyr Ser Pro
                530                 535                 540
```

155

```
Trp Cys His Pro Cys Gln Val Leu Met Pro Glu Trp Lys Arg Met
            545                 550             555
Ala Arg Thr Leu Thr Gly Leu Ile Asn Val Gly Ser Ile Asp Cys
            560                 565             570
Gln Gln Tyr His Ser Phe Cys Ala Gln Glu Asn Val Gln Arg Tyr
            575                 580             585
Pro Glu Ile Arg Phe Phe Pro Pro Lys Ser Asn Lys Ala Tyr Gln
            590                 595             600
Tyr His Ser Tyr Asn Gly Trp Asn Arg Asp Ala Tyr Ser Leu Arg
            605                 610             615
Ile Trp Gly Leu Gly Phe Leu Pro Gln Val Ser Thr Asp Leu Thr
            620                 625             630
Pro Gln Thr Phe Ser Glu Lys Val Leu Gln Gly Lys Asn His Trp
            635                 640             645
Val Ile Asp Phe Tyr Ala Pro Trp Cys Gly Pro Cys Gln Asn Phe
            650                 655             660
Ala Pro Glu Phe Glu Leu Leu Ala Arg Met Ile Lys Gly Lys Val
            665                 670             675
Lys Ala Gly Lys Val Asp Cys Gln Ala Tyr Ala Gln Thr Cys Gln
            680                 685             690
Lys Ala Gly Ile Arg Ala Tyr Pro Thr Val Lys Phe Tyr Phe Tyr
            695                 700             705
Glu Arg Ala Lys Arg Asn Phe Gln Glu Glu Gln Ile Asn Thr Arg
            710                 715             720
Asp Ala Lys Ala Ile Ala Ala Leu Ile Ser Glu Lys Leu Glu Thr
            725                 730             735
Leu Arg Asn Gln Gly Lys Arg Asn Lys Asp Glu Leu
            740                 745
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<210> 115
<211> 2720
<212> DNA
<213> Homosapiens

<400> 115
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 gagctctcgg ttcctctcag tcggacttcc tgacgccgcc agtgggcggg 100
 gcccttggg ccgtcgccac cactgtagtc atgtacccac cgccgccgcc 150
 gccgcctcat cgggacttca tctcggtgac gctgagcttt ggcgagagct 200
 atgacaacag caagagttgg cggcggcgct cgtgctggag gaaatggaag 250
 caactgtcga gattgcagcg gaatatgatt ctcttcctcc ttgcctttct 300
 gcttttctgt ggactcctct tctacatcaa cttggctgac cattggaaag 350
 ctctggcttt caggctagag gaagagcaga agatgaggcc agaaattgct 400
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156

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gggttaaaac cagcaaatcc acccgtctta ccagctcctc agaaggcgga 450

caccgaccct gagaacttac ctgagatttc gtcacagaag acacaaagac 500

acatccagcg gggaccacct cacctgcaga ttagaccccc aagccaagac 550

ctgaaggatg ggacccagga ggaggccaca aaaaggcaag aagcccctgt 600

ggatccccgc ccggaaggag atccgcagag gacagtcatc agctggaggg 650

gagcggtgat cgagcctgag cagggcaccg agctcccttc aagaagagca 700

gaagtgccca ccaagcctcc cctgccaccg gccaggacac agggcacacc 750

agtgcatctg aactatcgcc agaagggcgt gattgacgtc ttcctgcatg 800

catggaaagg ataccgcaag tttgcatggg gccatgacga gctgaagcct 850

gtgtccaggt ccttcagtga gtggtttggc ctcggtctca cactgatcga 900

cgcgctggac accatgtgga tcttgggtct gaggaaagaa tttgaggaag 950

ccaggaagtg ggtgtcgaag aagttacact ttgaaaagga cgtggacgtc 1000

aacctgtttg agagcacgat ccgcatcctg gggggggctcc tgagtgccta 1050

ccacctgtct ggggacagcc tcttcctgag gaaagctgag gattttggaa 1100

atcggctaat gcctgccttc agaacaccat ccaagattcc ttactcggat 1150

gtgaacatcg gtactggagt tgcccacccg ccacggtgga cctccgacag 1200

cactgtggcc gaggtgacca gcattcagct ggagttccgg gagctctccc 1250

gtctcacagg ggataagaag tttcaggagg cagtggagaa ggtgacacag 1300

cacatccacg gcctgtctgg gaagaaggat gggctggtgc ccatgttcat 1350

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caacctgctg cggccagaga ccgtggagag cctgttctac ctgtaccgcg 1850

tcacagggga ccgcaaatac caggactggg ctgggagat tctgcagagc 1900

ttcagccgat tcacacgggt cccctcgggt ggctattctt ccatcaacaa 1950

tgtccaggat cctcagaagc ccgagcctag ggacaagatg gagagcttct 2000
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157

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tcctggggga gacgctcaag tatctgttct tgctcttctc cgatgaccca 2050

aacctgctca gcctggacgc ctacgtgttc aacaccgaag cccaccctct 2100

gcctatctgg accctgcct agggtggatg gctgctggtg tggggacttc 2150

gggtgggcag aggcaccttg ctgggtctgt ggcattttcc aagggcccac 2200

gtagcaccgg caaccgccaa gtggcccagg ctctgaactg gctctgggct 2250

cctcctcgtc tctgctttaa tcaggacacc gtgaggacaa gtgaggccgt 2300

cagtcttggt gtgatgcggg gtgggctggg ccgctggagc ctccgcctgc 2350

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gtctctgtgg gccgaccaga ggggggcttc gaggtggtcc ctggtactgg 2450

ggtgaccgag tggacagccc agggtgcagc tctcccgggg ctcgtgaagc 2500

ctcagatgtc cccaatccaa gggtctggag gggctgccgt gactccagag 2550

gcctgaggct ccagggctgg ctctggtgtt tacaagctgg actcagggat 2600

cctcctggcc gccccgcagg gggcttggag ggctggacgg caagtccgtc 2650

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ttgatttgct ctaaccgcaa 2720
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<210> 116
<211> 699
<212> PRT
<213> Homosapiens

<400> 116

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Met Ala Ala Cys Glu Gly Arg Arg Ser Gly Ala Leu Gly Ser Ser
1               5                   10                  15

Gln Ser Asp Phe Leu Thr Pro Pro Val Gly Gly Ala Pro Trp Ala
                20                  25                  30

Val Ala Thr Thr Val Val Met Tyr Pro Pro Pro Pro Pro Pro
                35                  40                  45

His Arg Asp Phe Ile Ser Val Thr Leu Ser Phe Gly Glu Ser Tyr
                50                  55                  60

Asp Asn Ser Lys Ser Trp Arg Arg Arg Ser Cys Trp Arg Lys Trp
                65                  70                  75

Lys Gln Leu Ser Arg Leu Gln Arg Asn Met Ile Leu Phe Leu Leu
                80                  85                  90

Ala Phe Leu Leu Phe Cys Gly Leu Leu Phe Tyr Ile Asn Leu Ala
                95                  100                 105

Asp His Trp Lys Ala Leu Ala Phe Arg Leu Glu Glu Glu Gln Lys
                110                 115                 120

Met Arg Pro Glu Ile Ala Gly Leu Lys Pro Ala Asn Pro Pro Val
                125                 130                 135
```

158

Leu Pro Ala Pro Gln Lys Ala Asp Thr Asp Pro Glu Asn Leu Pro
             140             145              150

Glu Ile Ser Ser Gln Lys Thr Gln Arg His Ile Gln Arg Gly Pro
             155             160              165

Pro His Leu Gln Ile Arg Pro Pro Ser Gln Asp Leu Lys Asp Gly
             170             175              180

Thr Gln Glu Glu Ala Thr Lys Arg Gln Glu Ala Pro Val Asp Pro
             185             190              195

Arg Pro Glu Gly Asp Pro Gln Arg Thr Val Ile Ser Trp Arg Gly
             200             205              210

Ala Val Ile Glu Pro Glu Gln Gly Thr Glu Leu Pro Ser Arg Arg
             215             220              225

Ala Glu Val Pro Thr Lys Pro Pro Leu Pro Pro Ala Arg Thr Gln
             230             235              240

Gly Thr Pro Val His Leu Asn Tyr Arg Gln Lys Gly Val Ile Asp
             245             250              255

Val Phe Leu His Ala Trp Lys Gly Tyr Arg Lys Phe Ala Trp Gly
             260             265              270

His Asp Glu Leu Lys Pro Val Ser Arg Ser Phe Ser Glu Trp Phe
             275             280              285

Gly Leu Gly Leu Thr Leu Ile Asp Ala Leu Asp Thr Met Trp Ile
             290             295              300

Leu Gly Leu Arg Lys Glu Phe Glu Glu Ala Arg Lys Trp Val Ser
             305             310              315

Lys Lys Leu His Phe Glu Lys Asp Val Asp Val Asn Leu Phe Glu
             320             325              330

Ser Thr Ile Arg Ile Leu Gly Gly Leu Leu Ser Ala Tyr His Leu
             335             340              345

Ser Gly Asp Ser Leu Phe Leu Arg Lys Ala Glu Asp Phe Gly Asn
             350             355              360

Arg Leu Met Pro Ala Phe Arg Thr Pro Ser Lys Ile Pro Tyr Ser
             365             370              375

Asp Val Asn Ile Gly Thr Gly Val Ala His Pro Pro Arg Trp Thr
             380             385              390

Ser Asp Ser Thr Val Ala Glu Val Thr Ser Ile Gln Leu Glu Phe
             395             400              405

Arg Glu Leu Ser Arg Leu Thr Gly Asp Lys Lys Phe Gln Glu Ala
             410             415              420

Val Glu Lys Val Thr Gln His Ile His Gly Leu Ser Gly Lys Lys
             425             430              435

Asp Gly Leu Val Pro Met Phe Ile Asn Thr His Ser Gly Leu Phe
             440             445              450

```
Thr His Leu Gly Val Phe Thr Leu Gly Ala Arg Ala Asp Ser Tyr
                455                 460                 465

Tyr Glu Tyr Leu Leu Lys Gln Trp Ile Gln Gly Gly Lys Gln Glu
                470                 475                 480

Thr Gln Leu Leu Glu Asp Tyr Val Glu Ala Ile Glu Gly Val Arg
                485                 490                 495

Thr His Leu Leu Arg His Ser Glu Pro Ser Lys Leu Thr Phe Val
                500                 505                 510

Gly Glu Leu Ala His Gly Arg Phe Ser Ala Lys Met Asp His Leu
                515                 520                 525

Val Cys Phe Leu Pro Gly Thr Leu Ala Leu Gly Val Tyr His Gly
                530                 535                 540

Leu Pro Ala Ser His Met Glu Leu Ala Gln Glu Leu Met Glu Thr
                545                 550                 555

Cys Tyr Gln Met Asn Arg Gln Met Glu Thr Gly Leu Ser Pro Glu
                560                 565                 570

Ile Val His Phe Asn Leu Tyr Pro Gln Pro Gly Arg Arg Asp Val
                575                 580                 585

Glu Val Lys Pro Ala Asp Arg His Asn Leu Leu Arg Pro Glu Thr
                590                 595                 600

Val Glu Ser Leu Phe Tyr Leu Tyr Arg Val Thr Gly Asp Arg Lys
                605                 610                 615

Tyr Gln Asp Trp Gly Trp Glu Ile Leu Gln Ser Phe Ser Arg Phe
                620                 625                 630

Thr Arg Val Pro Ser Gly Gly Tyr Ser Ser Ile Asn Asn Val Gln
                635                 640                 645

Asp Pro Gln Lys Pro Glu Pro Arg Asp Lys Met Glu Ser Phe Phe
                650                 655                 660

Leu Gly Glu Thr Leu Lys Tyr Leu Phe Leu Leu Phe Ser Asp Asp
                665                 670                 675

Pro Asn Leu Leu Ser Leu Asp Ala Tyr Val Phe Asn Thr Glu Ala
                680                 685                 690

His Pro Leu Pro Ile Trp Thr Pro Ala
                695
```

<210> 117
<211> 1621
<212> DNA
<213> Homosapiens

<400> 117
```
gtgggattta tttgagtgca agatcgtttt ctcagtggtg gtggaagttg 50
cctcatcgca ggcagatgtt ggggctttgt ccgaacagct cccctctgcc 100
agcttctgta gataagggtt aaaaactaat atttatatga cagaagaaaa 150
```

160

```
agatgtcatt ccgtaaagta aacatcatca tcttggtcct ggctgttgct 200

ctcttcttac tggttttgca ccataacttc ctcagcttga gcagtttgtt 250

aaggaatgag gttacagatt caggaattgt agggcctcaa cctatagact 300

ttgtcccaaa tgctctccga catgcagtag atgggagaca agaggagatt 350

cctgtggtca tcgctgcatc tgaagacagg cttgggggg ccattgcagc 400

tataaacagc attcagcaca acactcgctc caatgtgatt ttctacattg 450

ttactctcaa caatacagca gaccatctcc ggtcctggct caacagtgat 500

tccctgaaaa gcatcagata caaaattgtc aattttgacc ctaaactttt 550

ggaaggaaaa gtaaaggagg atcctgacca gggggaatcc atgaaacctt 600

taacctttgc aaggttctac ttgccaattc tggttcccag cgcaaagaag 650

gccatataca tggatgatga tgtaattgtg caaggtgata ttcttgccct 700

ttacaataca gcactgaagc caggacatgc agctgcattt tcagaagatt 750

gtgattcagc ctctactaaa gttgtcatcc gtggagcagg aaaccagtac 800

aattacattg gctatcttga ctataaaaag gaaagaattc gtaagctttc 850

catgaaagcc agcacttgct catttaatcc tggagttttt gttgcaaacc 900

tgacggaatg gaaacgacag aatataacta ccaactggga aaaatggatg 950

aaactcaatg tagaagaggg actgtatagc agaaccctgg ctggtagcat 1000

cacaacacct cctctgctta tcgtatttta tcaacagcac tctaccatcg 1050

atcctatgtg gaatgtccgc caccttggtt ccagtgctgg aaaacgatat 1100

tcacctcagt ttgtaaaggc tgccaagtta ctccattgga atggacattt 1150

gaagccatgg ggaaggactg cttcatatac tgatgtttgg gaaaaatggt 1200

atattccaga cccaacaggc aaattcaacc taatccgaag atataccgag 1250

atctcaaaca taaagtgaaa cagaatttga actgtaagca agcatttctc 1300

aggaagtcct ggaagatagc atgcatggga agtaacagtt gctaggcttc 1350

aatgcctatc ggtagcaagc catggaaaaa gatgtgtcag ctaggtaaag 1400

atgacaaact gccctgtctg gcagtcagct tcccagacag actatagact 1450

ataaatatgt ctccatctgc cttaccaagt gttttcttac tacaatgctg 1500

aatgactgga aagaagaact gatatggcta gttcagctag ctggtacaga 1550

taattcaaaa ctgctgttgg ttttaatttt gtaacctgtg gcctgatctg 1600

taaataaaac ttacattttt c 1621
```

<210> 118
<211> 371
<212> PRT

<213> Homosapiens

<400> 118

```
Met Ser Phe Arg Lys Val Asn Ile Ile Ile Leu Val Leu Ala Val
 1               5               10              15

Ala Leu Phe Leu Leu Val Leu His His Asn Phe Leu Ser Leu Ser
            20              25              30

Ser Leu Leu Arg Asn Glu Val Thr Asp Ser Gly Ile Val Gly Pro
            35              40              45

Gln Pro Ile Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp
            50              55              60

Gly Arg Gln Glu Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp
            65              70              75

Arg Leu Gly Gly Ala Ile Ala Ala Ile Asn Ser Ile Gln His Asn
            80              85              90

Thr Arg Ser Asn Val Ile Phe Tyr Ile Val Thr Leu Asn Asn Thr
            95              100             105

Ala Asp His Leu Arg Ser Trp Leu Asn Ser Asp Ser Leu Lys Ser
            110             115             120

Ile Arg Tyr Lys Ile Val Asn Phe Asp Pro Lys Leu Leu Glu Gly
            125             130             135

Lys Val Lys Glu Asp Pro Asp Gln Gly Glu Ser Met Lys Pro Leu
            140             145             150

Thr Phe Ala Arg Phe Tyr Leu Pro Ile Leu Val Pro Ser Ala Lys
            155             160             165

Lys Ala Ile Tyr Met Asp Asp Asp Val Ile Val Gln Gly Asp Ile
            170             175             180

Leu Ala Leu Tyr Asn Thr Ala Leu Lys Pro Gly His Ala Ala Ala
            185             190             195

Phe Ser Glu Asp Cys Asp Ser Ala Ser Thr Lys Val Val Ile Arg
            200             205             210

Gly Ala Gly Asn Gln Tyr Asn Tyr Ile Gly Tyr Leu Asp Tyr Lys
            215             220             225

Lys Glu Arg Ile Arg Lys Leu Ser Met Lys Ala Ser Thr Cys Ser
            230             235             240

Phe Asn Pro Gly Val Phe Val Ala Asn Leu Thr Glu Trp Lys Arg
            245             250             255

Gln Asn Ile Thr Asn Gln Leu Glu Lys Trp Met Lys Leu Asn Val
            260             265             270

Glu Glu Gly Leu Tyr Ser Arg Thr Leu Ala Gly Ser Ile Thr Thr
            275             280             285

Pro Pro Leu Leu Ile Val Phe Tyr Gln Gln His Ser Thr Ile Asp
            290             295             300
```

162

```
Pro Met Trp Asn Val Arg His Leu Gly Ser Ser Ala Gly Lys Arg
            305                 310                 315
Tyr Ser Pro Gln Phe Val Lys Ala Ala Lys Leu Leu His Trp Asn
            320                 325                 330
Gly His Leu Lys Pro Trp Gly Arg Thr Ala Ser Tyr Thr Asp Val
            335                 340                 345
Trp Glu Lys Trp Tyr Ile Pro Asp Pro Thr Gly Lys Phe Asn Leu
            350                 355                 360
Ile Arg Arg Tyr Thr Glu Ile Ser Asn Ile Lys  ·
            365                 370
```

<210> 119
<211> 859
<212> DNA
<213> Homosapiens

<400> 119

```
ccatccctga gatctttta taaaaaaccc agtctttgct gaccagacaa 50

agcataccag atctcaccag agagtcgcag acactatgct gcctcccatg 100

gccctgccca gtgtgtcctg gatgctgctt cctgcctca ttctcctgtg 150

tcaggttcaa ggtgaagaaa cccagaagga actgccctct ccacggatca 200

gctgtcccaa aggctccaag gcctatggct ccccctgcta tgccttgttt 250

ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300

ctctggaaaa ctggtgtctg tgctcagtgg ggctgaggga tccttcgtgt 350

cctccctggt gaggagcatt agtaacagct actcatacat ctggattggg 400

ctccatgacc ccacacaggg ctctgagcct gatggagatg gatgggagtg 450

gagtagcact gatgtgatga attactttgc atgggagaaa aatccctcca 500

ccatcttaaa ccctggccac tgtgggagcc tgtcaagaag cacaggattt 550

ctgaagtgga aagattataa ctgtgatgca aagttaccct atgtctgcaa 600

gttcaaggac tagggcaggt gggaagtcag cagcctcagc ttggcgtgca 650

gctcatcatg gacatgagac cagtgtgaag actcaccctg gaagagaata 700

ttctccccaa actgccctac ctgactacct tgtcatgatc ctccttcttt 750

ttccttttc ttcaccttca tttcaggctt ttctctgtct tccatgtctt 800

gagatctcag agaataataa taaaaatgtt actttataaa aaaaaaaaaa 850

aaaaaaaa 859
```

<210> 120
<211> 175
<212> PRT
<213> Homosapiens

<400> 120

```
Met Leu Pro Pro Met Ala Leu Pro Ser Val Ser Trp Met Leu Leu
 1               5                  10                      15

Ser Cys Leu Ile Leu Leu Cys Gln Val Gln Gly Glu Glu Thr Gln
                20                  25                      30

Lys Glu Leu Pro Ser Pro Arg Ile Ser Cys Pro Lys Gly Ser Lys
                35                  40                      45

Ala Tyr Gly Ser Pro Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser
                50                  55                      60

Trp Met Asp Ala Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys
                65                  70                      75

Leu Val Ser Val Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser
                80                  85                      90

Leu Val Arg Ser Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly
                95                  100                     105

Leu His Asp Pro Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp
                110                 115                     120

Glu Trp Ser Ser Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys
                125                 130                     135

Asn Pro Ser Thr Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser
                140                 145                     150

Arg Ser Thr Gly Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala
                155                 160                     165

Lys Leu Pro Tyr Val Cys Lys Phe Lys Asp
                170                 175
```

<210> 121
<211> 2056
<212> DNA
<213> Homosapiens

<400> 121

```
aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50

catctgggtt tgggcagaaa ggagggtgct tcggagcccg ccctttctga 100

gcttcctggg ccggctctag aacaattcag gcttcgctgc gactcagacc 150

tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200

gctttatttt ggaaagaaac aatgttctag gtcaaactga gtctaccaaa 250

tgcagacttt cacaatggtt ctagaagaaa tctggacaag tcttttcatg 300

tggttttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350

tctgcctgcc cctcagaacc tctctgtact ctcaaccaac atgaagcatc 400

tcttgatgtg gagcccagtg atcgcgcctg agaaacagt gtactattct 450

gtcgaatacc aggggggagta cgagagcctg tacacgagcc acatctggat 500

ccccagcagc tggtgctcac tcactgaagg tcctgagtgt gatgtcactg 550
```

164

```
atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600

ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650

ctcaaccatc cttacccgac ctgggatgga gatcaccaaa gatggcttcc 700

acctggttat tgagctggag gacctggggc cccagtttga gttccttgtg 750

gcctactgga ggagggagcc tggtgccgag gaacatgtca aaatggtgag 800

gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850

actgtgtgaa ggcccagaca ttcgtgaagg ccattgggag gtacagcgcc 900

ttcagccaga cagaatgtgt ggaggtgcaa ggagaggcca ttcccctggt 950

actggccctg tttgcctttg ttggcttcat gctgatcctt gtggtcgtgc 1000

cactgttcgt ctggaaaatg ggccggctgc tccagtactc ctgttgcccc 1050

gtggtggtcc tcccagacac cttgaaaata accaattcac cccagaagtt 1100

aatcagctgc agaagggagg aggtggatgc ctgtgccacg gctgtgatgt 1150

ctcctgagga actcctcagg gcctggatct cataggtttg cggaagggcc 1200

caggtgaagc cgagaacctg gtctgcatga catggaaacc atgaggggac 1250

aagttgtgtt tctgttttcc gccacggaca agggatgaga gaagtaggaa 1300

gagcctgttg tctacaagtc tagaagcaac catcagaggc agggtggttt 1350

gtctaacaga acactgactg aggcttaggg gatgtgacct ctagactggg 1400

ggctgccact tgctggctga gcaaccctgg gaaaagtgac ttcatccctt 1450

cggtcctaag ttttctcatc tgtaatgggg gaattaccta cacacctgct 1500

aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550

tacacccagc acttgcaagg ctagagggaa actggtgaca ctctacagtc 1600

tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650

gatcaaggac tctacacact gggtggcttg gagagcccac tttcccagaa 1700

taatccttga gagaaaagga atcatgggag caatggtgtt gagttcactt 1750

caagcccaat gccggtgcag aggggaatgg cttagcgagc tctacagtag 1800

gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850

acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900

agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950

gtaacatgtg catgtttgtt gtgctccttt tttctgttgg taaagtacag 2000

aattcagcaa ataaaaaggg ccaccctggc caaaagcggt aaaaaaaaaa 2050

aaaaaa 2056
```

<210> 122

<211> 311
<212> PRT
<213> Homosapiens

<400> 122

```
Met Gln Thr Phe Thr Met Val Leu Glu Glu Ile Trp Thr Ser Leu
  1               5                  10                  15

Phe Met Trp Phe Phe Tyr Ala Leu Ile Pro Cys Leu Leu Thr Asp
                 20                  25                  30

Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser
                 35                  40                  45

Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro
                 50                  55                  60

Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
                 65                  70                  75

Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser
                 80                  85                  90

Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala
                 95                 100                 105

Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
                110                 115                 120

Thr Ser Ala Trp Ser Ile Leu Lys His Pro Phe Asn Arg Asn Ser
                125                 130                 135

Thr Ile Leu Thr Arg Pro Gly Met Glu Ile Thr Lys Asp Gly Phe
                140                 145                 150

His Leu Val Ile Glu Leu Glu Asp Leu Gly Pro Gln Phe Glu Phe
                155                 160                 165

Leu Val Ala Tyr Trp Arg Arg Glu Pro Gly Ala Glu Glu His Val
                170                 175                 180

Lys Met Val Arg Ser Gly Gly Ile Pro Val His Leu Glu Thr Met
                185                 190                 195

Glu Pro Gly Ala Ala Tyr Cys Val Lys Ala Gln Thr Phe Val Lys
                200                 205                 210

Ala Ile Gly Arg Tyr Ser Ala Phe Ser Gln Thr Glu Cys Val Glu
                215                 220                 225

Val Gln Gly Glu Ala Ile Pro Leu Val Leu Ala Leu Phe Ala Phe
                230                 235                 240

Val Gly Phe Met Leu Ile Leu Val Val Val Pro Leu Phe Val Trp
                245                 250                 255

Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val
                260                 265                 270

Leu Pro Asp Thr Leu Lys Ile Thr Asn Ser Pro Gln Lys Leu Ile
                275                 280                 285

Ser Cys Arg Arg Glu Glu Val Asp Ala Cys Ala Thr Ala Val Met
```

Ser Pro Glu Glu Leu Leu Arg Ala Trp Ile Ser
            305                     310

<210> 123
<211> 1227
<212> DNA
<213> Homosapiens

<400> 123
 cggacgcgtg ggccgccacc tccggaacaa gccatggtgg cggcgacggt 50

 ggcagcggcg tggctgctcc tgtgggctgc ggcctgcgcg cagcaggagc 100

 aggacttcta cgacttcaag gcggtcaaca tccggggcaa actggtgtcg 150

 ctggagaagt accgcggatc ggtgtccctg gtggtgaatg tggccagcga 200

 gtgcggcttc acagaccagc actaccgagc cctgcagcag ctgcagcgag 250

 acctgggccc ccaccacttt aacgtgctcg ccttcccctg caaccagttt 300

 ggccaacagg agcctgacag caacaaggag attgagagct ttgcccgccg 350

 cacctacagt gtctcattcc ccatgtttag caagattgca gtcaccggta 400

 ctggtgccca tcctgccttc aagtacctgg cccagacttc tgggaaggag 450

 cccacctgga acttctggaa gtacctagta gccccagatg gaaaggtggt 500

 aggggcttgg gacccaactg tgtcagtgga ggaggtcaga ccccagatca 550

 cagcgctcgt gaggaagctc atcctactga agcgagaaga cttataacca 600

 ccgcgtctcc tcctccacca cctcatcccg cccacctgtg tggggctgac 650

 caatgcaaac tcaaatggtg cttcaaaggg agagacccac tgactctcct 700

 tcctttactc ttatgccatt ggtcccatca ttcttgtggg ggaaaaattc 750

 tagtattttg attatttgaa tcttacagca acaaatagga actcctggcc 800

 aatgagagct cttgaccagt gaatcaccag ccgatacgaa cgtcttgcca 850

 acaaaaatgt gtggcaaata gaagtatatc aagcaataat ctcccaccca 900

 aggcttctgt aaactgggac caatgattac ctcatagggc tgttgtgagg 950

 attaggatga aatacctgtg aaagtgccta ggcagtgcca gccaaatagg 1000

 aggcattcaa tgaacatttt ttgcatataa accaaaaaat aacttgttat 1050

 caataaaaac ttgcatccaa catgaatttc cagccgatga taatccaggc 1100

 caaaggttta gttgttgtta tttcctctgt attattttct tcattacaaa 1150

 agaaatgcaa gttcattgta acaatccaaa caatacctca cgatataaaa 1200

 taaaaatgaa agtatcctcc tcaaaaa 1227

<210> 124
<211> 187

167

<212> PRT
<213> Homosapiens

<400> 124

```
Met Val Ala Ala Thr Val Ala Ala Ala Trp Leu Leu Leu Trp Ala
 1               5                  10                  15

Ala Ala Cys Ala Gln Gln Glu Gln Asp Phe Tyr Asp Phe Lys Ala
              20                  25                  30

Val Asn Ile Arg Gly Lys Leu Val Ser Leu Glu Lys Tyr Arg Gly
              35                  40                  45

Ser Val Ser Leu Val Val Asn Val Ala Ser Glu Cys Gly Phe Thr
              50                  55                  60

Asp Gln His Tyr Arg Ala Leu Gln Gln Leu Gln Arg Asp Leu Gly
              65                  70                  75

Pro His His Phe Asn Val Leu Ala Phe Pro Cys Asn Gln Phe Gly
              80                  85                  90

Gln Gln Glu Pro Asp Ser Asn Lys Glu Ile Glu Ser Phe Ala Arg
              95                  100                ·105

Arg Thr Tyr Ser Val Ser Phe Pro Met Phe Ser Lys Ile Ala Val
              110                 115                 120

Thr Gly Thr Gly Ala His Pro Ala Phe Lys Tyr Leu Ala Gln Thr
              125                 130                 135

Ser Gly Lys Glu Pro Thr Trp Asn Phe Trp Lys Tyr Leu Val Ala
              140                 145                 150

Pro Asp Gly Lys Val Val Gly Ala Trp Asp Pro Thr Val Ser Val
              155                 160                 165

Glu Glu Val Arg Pro Gln Ile Thr Ala Leu Val Arg Lys Leu Ile
              170                 175                 180

Leu Leu Lys Arg Glu Asp Leu
              185
```

<210> 125
<211> 1486
<212> DNA
<213> Homosapiens

<400> 125

```
cggacgcgtg ggcggacgcg tgggcggacg cgtgggttgg gagggggcag 50

gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100

ggacttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150

cactcacctg ttcttgcccc tggtgttcct gacaggtctc tgctccccct 200

ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250

gaatttggat acagtgtctt acaacatgtt gggggtggac agcgatggat 300

gctggtgggc gcccctggg atgggccttc aggcgaccgg aggggggacg 350
```

168

```
tttatcgctg ccctgtaggg ggggcccaca atgccccatg tgccaagggc 400

cacttaggtg actaccaact gggaaattca tctcatcctg ctgtgaatat 450

gcacctgggg atgtctctgt tagagacaga tggtgatggg ggattcatgg 500

tgagctaagg agagggtggt ggcagtgtct ctgaaggtcc ataaaagaaa 550

aaagagaagt gtggtaaggg aaaatggtct gtgtggaggg gtcaaggagt 600

taaaaaccct agaaagcaaa aggtaggtaa tgtcagggag tagtcttcat 650

gcctccttca actgggagca tgttctgagg gtgccctccc aagcctggga 700

gtaactattt cccccatccc caggcctgtg ccctctctg tctcgtgct 750

tgtggcagct ctgtcttcag ttctgggata tgtgcccgtg tggatgcttc 800

attccagcct cagggaagcc tggcacccac tgcccaacgt gagccagagg 850

aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900

gggcaaagcg gtatgatgcc tggcaaaggg cctgcatggc tatcctcatt 950

gctacctaat gtgcttgcaa aagctccatg tttcctaaca gattcagact 1000

cctggccagg tgtggtggcc cacacctgta attctagcac tttgggaggc 1050

caaggtgggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100

catggtgaaa ctccatctct actaaaaaaa aaaaaataca aaaattagct 1150

gggtgcgcta gtgcatgcct gtaatctcat ctactcggga ggctaagaca 1200

ggagactctc acttcaaccc aggaggtgga ggttgcggtg agccaagatt 1250

gtgcctctgc actctagcgt gggtgacaga gtaagcgaga ctccatctca 1300

aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350

gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400

gcaggaggat tgcttgaggt ctggaggttt gagaccagcc tgggcaacat 1450

agaaagaccc catctctaaa taaatgtttt aaaaat 1486
```

```
<210> 126
<211> 124
<212> PRT
<213> Homosapiens

<400> 126
  Met Glu Leu Pro Phe Val Thr His Leu Phe Leu Pro Leu Val Phe
   1               5                  10                  15

  Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp Glu His His Pro
                     20                  25                  30

  Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val
                     35                  40                  45

  Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala
                     50                  55                  60
```

169

```
Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg
                 65              70              75

Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His
                 80              85              90

Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn
                 95             100             105

Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly
                110             115             120

Phe Met Val Ser
```

<210> 127
<211> 1523
<212> DNA
<213> Homosapiens

<400> 127

```
gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc  50

cggagcccag cccttttccta acccaaccca acctagccca gtcccagccg 100

ccagcgcctg tccctgtcac ggaccccagc gttaccatgc atcctgccgt 150

cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200

gggttttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250

atagatgaaa ttttaaacaa tgctgatgtt gctttagtaa attttttatgc 300

tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350

ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400

agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 450

caaatacCCa accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500

aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550

caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600

tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650

cggacaacta tagagttttt gaacgagtag cgaatatttt gcatgatgac 700

tgtgcctttc tttctgcatt tgggggatgtt tcaaaaccgg aaagatatag 750

tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800

tgtacttggg agctatgaca aattttgatg tgacttacaa ttggattcaa 850

gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900

attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950

atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000

·agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050
```

```
acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100

ctattgacag ctttaggcat atgtatgtgt ttggagactt caaagatgta 1150

ttaattcctg gaaaactcaa gcaattcgta tttgacttac attctggaaa 1200

actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250

gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300

aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350

gctttaaaaa cttgaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400

cctacgtggt ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450

tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500

aaaaaaaaaa aaaaaaaaaa aaa 1523
```

<210> 128
<211> 406
<212> PRT
<213> Homosapiens

<400> 128

```
Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser
 1               5                  10                  15

Leu Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu
                20                  25                  30

Ile Thr Ser Leu Ala Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn
                35                  40                  45

Ala Asp Val Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe
                50                  55                  60

Ser Gln Met Leu His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile
                65                  70                  75

Lys Glu Glu Phe Pro Asn Glu Asn Gln Val Val Phe Ala Arg Val
                80                  85                  90

Asp Cys Asp Gln His Ser Asp Ile Ala Gln Arg Tyr Arg Ile Ser
                95                  100                 105

Lys Tyr Pro Thr Leu Lys Leu Phe Arg Asn Gly Met Met Met Lys
                110                 115                 120

Arg Glu Tyr Arg Gly Gln Arg Ser Val Lys Ala Leu Ala Asp Tyr
                125                 130                 135

Ile Arg Gln Gln Lys Ser Asp Pro Ile Gln Glu Ile Arg Asp Leu
                140                 145                 150

Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys Arg Asn Ile Ile Gly
                155                 160                 165

Tyr Phe Glu Gln Lys Asp Ser Asp Asn Tyr Arg Val Phe Glu Arg
                170                 175                 180

Val Ala Asn Ile Leu His Asp Asp Cys Ala Phe Leu Ser Ala Phe
```

```
                185                      190                      195

Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn Ile Ile
                200                      205                      210

Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu Gly
                215                      220                      225

Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys
                230                      235                      240

Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu
                245                      250                      255

Leu Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys
                260                      265                      270

Glu Asp Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg
                275                      280                      285

Gln Leu Ile Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp
                290                      295                      300

Cys Asp Lys Phe Arg His Pro Leu Leu His Ile Gln Lys Thr Pro
                305                      310                      315

Ala Asp Cys Pro Val Ile Ala Ile Asp Ser Phe Arg His Met Tyr
                320                      325                      330

Val Phe Gly Asp Phe Lys Asp Val Leu Ile Pro Gly Lys Leu Lys
                335                      340                      345

Gln Phe Val Phe Asp Leu His Ser Gly Lys Leu His Arg Glu Phe
                350                      355                      360

His His Gly Pro Asp Pro Thr Asp Thr Ala Pro Gly Glu Gln Ala
                365                      370                      375

Gln Asp Val Ala Ser Ser Pro Pro Glu Ser Ser Phe Gln Lys Leu
                380                      385                      390

Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu Arg Asp Arg Asp Glu
                395                      400                      405

Leu
```

<210> 129
<211> 1575
<212> DNA
<213> Homosapiens

<400> 129
```
 gagcaggacg gagccatgga ccccgccagg aaagcaggtg cccaggccat 50

 gatctggact gcaggctggc tgctgctgct gctgcttcgc ggaggagcgc 100

 aggccctgga gtgctacagc tgcgtgcaga aagcagatga cggatgctcc 150

 ccgaacaaga tgaagacagt gaagtgcgcg ccgggcgtgg acgtctgcac 200

 cgaggccgtg ggggcggtgg agaccatcca cggacaattc tcgctggcag 250
```

```
tgcggggttg cggttcggga ctccccggca agaatgaccg cggcctggat 300

cttcacgggc ttctggcgtt catccagctg cagcaatgcg ctcaggatcg 350

ctgcaacgcc aagctcaacc tcacctcgcg ggcgctcgac ccggcaggta 400

atgagagtgc atacccgccc aacggcgtgg agtgctacag ctgtgtgggc 450

ctgagccggg aggcgtgcca gggtacatcg ccgccggtcg tgagctgcta 500

caacgccagc gatcatgtct acaagggctg cttcgacggc aacgtcacct 550

tgacggcagc taatgtgact gtgtccttgc ctgtccgggg ctgtgtccag 600

gatgaattct gcactcggga tggagtaaca ggcccagggt tcacgctcag 650

tggctcctgt tgccaggggt cccgctgtaa ctctgacctc cgcaacaaga 700

cctacttctc ccctcgaatc ccaccccttg tccggctgcc ccctccagag 750

cccacgactg tggcctcaac cacatctgtc accacttcta cctcggcccc 800

agtgagaccc acatccacca ccaaacccat gccagcgcca accagtcaga 850

ctccgagaca gggagtagaa cacgaggcct cccgggatga ggagcccagg 900

ttgactggag cgccgctgg ccaccaggac cgcagcaatt cagggcagta 950

tcctgcaaaa ggggggcccc agcagcccca taataaaggc tgtgtggctc 1000

ccacagctgg attggcagcc cttctgttgg ccgtggctgc tggtgtccta 1050

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tgggtacccc tcttctcatc acttcctgtt cccaccactg gactgggctg 1150

gcccagcccc tgttttttcca acattcccca gtatccccag cttctgctgc 1200

gctggtttgc ggctttggga aataaaatac cgttgtatat attctgccag 1250

gggtgttcta gcttttttgag gacagctcct gtatccttct catccttgtc 1300

tctccgcttg tcctcttgtg atgttaggac agagtgagag aagtcagctg 1350

tcacggggaa ggtgagagag aggatgctaa gcttcctact cactttctcc 1400

tagccagcct ggactttgga gcgtgggggtg ggtgggacaa tggctcccca 1450

ctctaagcac tgcctcccct actccccgca tctttgggga atcggttccc 1500

catatgtctt ccttactaga ctgtgagctc ctcgagggggg ggcccggtac 1550

ccaattcgcc ctatagtgag tcgta 1575
```

&lt;210&gt; 130
&lt;211&gt; 346
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 130
```
 Met Asp Pro Ala Arg Lys Ala Gly Ala Gln Ala Met Ile Trp Thr
  1           5                   10                  15
```

173

```
Ala Gly Trp Leu Leu Leu Leu Leu Leu Arg Gly Gly Ala Gln Ala
                20                  25                      30

Leu Glu Cys Tyr Ser Cys Val Gln Lys Ala Asp Asp Gly Cys Ser
                35                  40                      45

Pro Asn Lys Met Lys Thr Val Lys Cys Ala Pro Gly Val Asp Val
                50                  55                      60

Cys Thr Glu Ala Val Gly Ala Val Glu Thr Ile His Gly Gln Phe
                65                  70                      75

Ser Leu Ala Val Arg Gly Cys Gly Ser Gly Leu Pro Gly Lys Asn
                80                  85                      90

Asp Arg Gly Leu Asp Leu His Gly Leu Leu Ala Phe Ile Gln Leu
                95                  100                     105

Gln Gln Cys Ala Gln Asp Arg Cys Asn Ala Lys Leu Asn Leu Thr
                110                 115                     120

Ser Arg Ala Leu Asp Pro Ala Gly Asn Glu Ser Ala Tyr Pro Pro
                125                 130                     135

Asn Gly Val Glu Cys Tyr Ser Cys Val Gly Leu Ser Arg Glu Ala
                140                 145                     150

Cys Gln Gly Thr Ser Pro Pro Val Val Ser Cys Tyr Asn Ala Ser
                155                 160                     165

Asp His Val Tyr Lys Gly Cys Phe Asp Gly Asn Val Thr Leu Thr
                170                 175                     180

Ala Ala Asn Val Thr Val Ser Leu Pro Val Arg Gly Cys Val Gln
                185                 190                     195

Asp Glu Phe Cys Thr Arg Asp Gly Val Thr Gly Pro Gly Phe Thr
                200                 205                     210

Leu Ser Gly Ser Cys Cys Gln Gly Ser Arg Cys Asn Ser Asp Leu
                215                 220                     225

Arg Asn Lys Thr Tyr Phe Ser Pro Arg Ile Pro Pro Leu Val Arg
                230                 235                     240

Leu Pro Pro Pro Glu Pro Thr Thr Val Ala Ser Thr Thr Ser Val
                245                 250                     255

Thr Thr Ser Thr Ser Ala Pro Val Arg Pro Thr Ser Thr Thr Lys
                260                 265                     270

Pro Met Pro Ala Pro Thr Ser Gln Thr Pro Arg Gln Gly Val Glu
                275                 280                     285

His Glu Ala Ser Arg Asp Glu Glu Pro Arg Leu Thr Gly Gly Ala
                290                 295                     300

Ala Gly His Gln Asp Arg Ser Asn Ser Gly Gln Tyr Pro Ala Lys
                305                 310                     315

Gly Gly Pro Gln Gln Pro His Asn Lys Gly Cys Val Ala Pro Thr
                320                 325                     330
```

174

Ala Gly Leu Ala Ala Leu Leu Leu Ala Val Ala Ala Gly Val Leu
                335                 340                 345

Leu


<210> 131
<211> 415
<212> DNA
<213> Homosapiens

<400> 131
 aaacttgacg ccatgaagat cccggtcctt cctgccgtgg tgctcctctc 50

 cctcctggtg ctccactctg cccagggagc caccctgggt ggtcctgagg 100

 aagaaagcac cattgagaat tatgcgtcac gacccgaggc ctttaacacc 150

 ccgttcctga acatcgacaa attgcgatct gcgtttaagg ctgatgagtt 200

 cctgaactgg cacgccctct ttgagtctat caaaaggaaa cttcctttcc 250

 tcaactggga tgcctttcct aagctgaaag gactgaggag cgcaactcct 300

 gatgcccagt gaccatgacc tccactggaa gaggggggcta gcgtgagcgc 350

 tgattctcaa cctaccataa ctctttcctg cctcaggaac tccaataaaa 400

 cattttccat ccaaa 415

<210> 132
<211> 99
<212> PRT
<213> Homosapiens

<400> 132
 Met Lys Ile Pro Val Leu Pro Ala Val Val Leu Leu Ser Leu Leu
   1               5               10                  15

 Val Leu His Ser Ala Gln Gly Ala Thr Leu Gly Gly Pro Glu Glu
                20                  25                  30

 Glu Ser Thr Ile Glu Asn Tyr Ala Ser Arg Pro Glu Ala Phe Asn
                35                  40                  45

 Thr Pro Phe Leu Asn Ile Asp Lys Leu Arg Ser Ala Phe Lys Ala
                50                  55                  60

 Asp Glu Phe Leu Asn Trp His Ala Leu Phe Glu Ser Ile Lys Arg
                65                  70                  75

 Lys Leu Pro Phe Leu Asn Trp Asp Ala Phe Pro Lys Leu Lys Gly
                80                  85                  90

 Leu Arg Ser Ala Thr Pro Asp Ala Gln
                95

<210> 133
<211> 678
<212> DNA
<213> Homosapiens

<400> 133

175

```
cagttctgaa atcaatggag ttaatttagg gaatacaaac cagccatggg 50

ggtggagatt gcctttgcct cagtgattct cacctgcctc tcccttctgg 100

cagcaggagt ctcccaggtt gttcttctcc agccagttcc aactcaggag 150

acaggtccca aggccatggg agatctctcc tgtggctttg ccggccactc 200

atgagagtgt ttttgtgtaa agtatttttt agaatactgt tgacttcttc 250

atgatttaat aaccatcctt tgcgaagttt tatgaggctt taggggaatg 300

tcaaccctca aattttgtt atactagatg gcttccattt acccaccact 350

attttaaggt cccttattt ttaggttcaa ggttcatttg acttgagaaa 400

gtgcccttct gcagcttcat tgattttgtt tatcttcact attaattgta 450

acgattaaaa aagaataaga gcacgcagac ctctaggaga atattttatc 500

cctgggtgcc cctgacacat ttatgtagtg atcccacaaa tgtgattgtt 550

aatttaaatg ttattctaat attagtacat tcagttgtga tgtaatatga 600

ataaccagaa tctatttctt aaaagttttg agtatatttt tcaactagat 650

atttgtatag aaagactgaa tagtgatg 678
```

<210> 134
<211> 52
<212> PRT
<213> Homosapiens

<400> 134
```
 Met Gly Val Glu Ile Ala Phe Ala Ser Val Ile Leu Thr Cys Leu
  1               5                  10                  15

 Ser Leu Leu Ala Ala Gly Val Ser Gln Val Val Leu Leu Gln Pro
                 20                  25                  30

 Val Pro Thr Gln Glu Thr Gly Pro Lys Ala Met Gly Asp Leu Ser
                 35                  40                  45

 Cys Gly Phe Ala Gly His Ser
                 50
```

<210> 135
<211> 1917
<212> DNA
<213> Homosapiens

<400> 135
```
gggggaatctg cagtaggtct gccggcgatg gagtggtggg ctagctcgcc 50

gcttcggctc tggctgctgt tgttcctcct gccctcagcg cagggccgcc 100

agaaggagtc aggttcaaaa tggaaagtat ttattgacca aattaacagg 150

tctttggaga attacgaacc atgttcaagt caaaactgca gctgctacca 200

tggtgtcata gaagaggatc taactccttt ccgaggaggc atctccagga 250

agatgatggc agaggtagtc agacggaagc tagggaccca ctatcagatc 300
```

```
actaagaaca gactgtaccg ggaaaatgac tgcatgttcc cctcaaggtg 350

tagtggtgtt gagcacttta ttttggaagt gatcgggcgt ctccctgaca 400

tggagatggt gatcaatgta cgagattatc ctcaggttcc taaatggatg 450

gagcctgcca tcccagtctt ctccttcagt aagacatcag agtaccatga 500

tatcatgtat cctgcttgga cattttggga aggggggacct gctgtttggc 550

caatttatcc tacaggtctt ggacggtggg acctcttcag agaagatctg 600

gtaaggtcag cagcacagtg gccatggaaa aagaaaaact ctacagcata 650

tttccgagga tcaaggacaa gtccagaacg agatcctctc attcttctgt 700

ctcggaaaaa cccaaaactt gttgatgcag aatacaccaa aaaccaggcc 750

tggaaatcta tgaaagatac cttaggaaag ccagctgcta aggatgtcca 800

tcttgtggat cactgcaaat acaagtatct gtttaatttt cgaggcgtag 850

ctgcaagttt ccggtttaaa cacctcttcc tgtgtggctc acttgttttc 900

catgttggtg atgagtggct agaattcttc tatccacagc tgaagccatg 950

ggttcactat atcccagtca aaacagatct ctccaatgtc caagagctgt 1000

tacaatttgt aaaagcaaat gatgatgtag ctcaagagat tgctgaaagg 1050

ggaagccagt ttattaggaa ccatttgcag atggatgaca tcacctgtta 1100

ctgggagaac ctcttgagtg aatactctaa attcctgtct tataatgtaa 1150

cgagaaggaa aggttatgat caaattattc ccaaaatgtt gaaaactgaa 1200

ctatagtagt catcatagga ccatagtcct ctttgtggca acagatctca 1250

gatatcctac ggtgagaagc ttaccataag cttggctcct ataccttgaa 1300

tatctgctat caagccaaat acctggtttt ccttatcatg ctgcacccag 1350

agcaactctt gagaaagatt taaaatgtgt ctaatacact gatatgaagc 1400

agttcaactt tttggatgaa taaggaccag aaatcgtgag atgtggattt 1450

tgaacccaac tctacctttc attttcttaa gaccaatcac agcttgtgcc 1500

tcagatcatc cacctgtgtg agtccatcac tgtgaaattg actgtgtcca 1550

tgtgatgatg ccctttgtcc cattatttgg agcagaaaat tcgtcatttg 1600

gaagtagtac aactcattgc tggaattgtg aaattattca aggcgtgatc 1650

tctgtcactt tattttaatg taggaaaccc tatggggttt atgaaaaata 1700

cttggggatc attctctgaa tggtctaagg aagcggtagc catgccatgc 1750

aatgatgtag gagttctctt ttgtaaaacc ataaactctg ttactcagga 1800

ggtttctata atgccacata gaaagaggcc aattgcatga gtaattattg 1850

caattggatt tcaggttccc tttttgtgcc ttcatgccct acttcttaat 1900
```

gcctctctaa agccaaa 1917

<210> 136
<211> 392
<212> PRT
<213> Homosapiens

<400> 136

```
Met Glu Trp Trp Ala Ser Ser Pro Leu Arg Leu Trp Leu Leu Leu
 1               5                  10                  15

Phe Leu Leu Pro Ser Ala Gln Gly Arg Gln Lys Glu Ser Gly Ser
               20                  25                  30

Lys Trp Lys Val Phe Ile Asp Gln Ile Asn Arg Ser Leu Glu Asn
               35                  40                  45

Tyr Glu Pro Cys Ser Ser Gln Asn Cys Ser Cys Tyr His Gly Val
               50                  55                  60

Ile Glu Glu Asp Leu Thr Pro Phe Arg Gly Gly Ile Ser Arg Lys
               65                  70                  75

Met Met Ala Glu Val Val Arg Arg Lys Leu Gly Thr His Tyr Gln
               80                  85                  90

Ile Thr Lys Asn Arg Leu Tyr Arg Glu Asn Asp Cys Met Phe Pro
               95                 100                 105

Ser Arg Cys Ser Gly Val Glu His Phe Ile Leu Glu Val Ile Gly
              110                 115                 120

Arg Leu Pro Asp Met Glu Met Val Ile Asn Val Arg Asp Tyr Pro
              125                 130                 135

Gln Val Pro Lys Trp Met Glu Pro Ala Ile Pro Val Phe Ser Phe
              140                 145                 150

Ser Lys Thr Ser Glu Tyr His Asp Ile Met Tyr Pro Ala Trp Thr
              155                 160                 165

Phe Trp Glu Gly Gly Pro Ala Val Trp Pro Ile Tyr Pro Thr Gly
              170                 175                 180

Leu Gly Arg Trp Asp Leu Phe Arg Glu Asp Leu Val Arg Ser Ala
              185                 190                 195

Ala Gln Trp Pro Trp Lys Lys Lys Asn Ser Thr Ala Tyr Phe Arg
              200                 205                 210

Gly Ser Arg Thr Ser Pro Glu Arg Asp Pro Leu Ile Leu Leu Ser
              215                 220                 225

Arg Lys Asn Pro Lys Leu Val Asp Ala Glu Tyr Thr Lys Asn Gln
              230                 235                 240

Ala Trp Lys Ser Met Lys Asp Thr Leu Gly Lys Pro Ala Ala Lys
              245                 250                 255

Asp Val His Leu Val Asp His Cys Lys Tyr Lys Tyr Leu Phe Asn
              260                 265                 270

Phe Arg Gly Val Ala Ala Ser Phe Arg Phe Lys His Leu Phe Leu
```

```
Cys Gly Ser Leu Val Phe His Val Gly Asp Glu Trp Leu Glu Phe
              290                 295                 300
Phe Tyr Pro Gln Leu Lys Pro Trp Val His Tyr Ile Pro Val Lys
              305                 310                 315
Thr Asp Leu Ser Asn Val Gln Glu Leu Leu Gln Phe Val Lys Ala
              320                 325                 330
Asn Asp Asp Val Ala Gln Glu Ile Ala Glu Arg Gly Ser Gln Phe
              335                 340                 345
Ile Arg Asn His Leu Gln Met Asp Asp Ile Thr Cys Tyr Trp Glu
              350                 355                 360
Asn Leu Leu Ser Glu Tyr Ser Lys Phe Leu Ser Tyr Asn Val Thr
              365                 370                 375
Arg Arg Lys Gly Tyr Asp Gln Ile Ile Pro Lys Met Leu Lys Thr
              380                 385                 390
Glu Leu
```

<210> 137
<211> 662
<212> DNA
<213> Homosapiens

<400> 137
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attctcctag agcatctttg gaagcatgag gccacgatgc tgcatcttgg 50

ctcttgtctg ctggataaca gtcttcctcc tccagtgttc aaaaggaact 100

acagacgctc ctgttggctc aggactgtgg ctgtgccagc cgacacccag 150

gtgtgggaac aagatctaca acccttcaga gcagtgctgt tatgatgatg 200

ccatcttatc cttaaaggag acccgccgct gtggctccac ctgcaccttc 250

tggccctgct ttgagctctg ctgtcccgag tcttttggcc cccagcagaa 300

gtttcttgtg aagttgaggg ttctgggtat gaagtctcag tgtcacttat 350

ctcccatctc ccggagctgt accaggaaca ggaggcacgt cctgtaccca 400

taaaaacccc aggctccact ggcagacggc agacaagggg agaagagacg 450

aagcagctgg acatcggaga ctacagttga acttcggaga gaagcaactt 500

gacttcagag ggatggctca atgacatagc tttggagagg agcccagctg 550

gggatggcca gacttcaggg gaagaatgcc ttcctgcttc atccccttc 600

cagctccct tcccgctgag agccactttc atcggcaata aaatccccca 650

catttaccat ct 662
```

<210> 138
<211> 125
<212> PRT

<213> Homosapiens

<400> 138
```
Met Arg Pro Arg Cys Cys Ile Leu Ala Leu Val Cys Trp Ile Thr
 1               5                  10              15

Val Phe Leu Leu Gln Cys Ser Lys Gly Thr Thr Asp Ala Pro Val
                20                  25              30

Gly Ser Gly Leu Trp Leu Cys Gln Pro Thr Pro Arg Cys Gly Asn
                35                  40              45

Lys Ile Tyr Asn Pro Ser Glu Gln Cys Cys Tyr Asp Asp Ala Ile
                50                  55              60

Leu Ser Leu Lys Glu Thr Arg Arg Cys Gly Ser Thr Cys Thr Phe
                65                  70              75

Trp Pro Cys Phe Glu Leu Cys Cys Pro Glu Ser Phe Gly Pro Gln
                80                  85              90

Gln Lys Phe Leu Val Lys Leu Arg Val Leu Gly Met Lys Ser Gln
                95                 100             105

Cys His Leu Ser Pro Ile Ser Arg Ser Cys Thr Arg Asn Arg Arg
               110                 115             120

His Val Leu Tyr Pro
               125
```

<210> 139
<211> 745
<212> DNA
<213> Homosapiens

<400> 139
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cctctgtcca ctgctttcgt gaagacaaga tgaagttcac aattgtcttt 50

gctggacttc ttggagtctt tctagctcct gccctagcta actataatat 100

caacgtcaat gatgacaaca acaatgctgg aagtgggcag cagtcagtga 150

gtgtcaacaa tgaacacaat gtggccaatg ttgacaataa caacggatgg 200

gactcctgga attccatctg ggattatgga aatggctttg ctgcaaccag 250

actctttcaa aagaagacat gcattgtgca caaaatgaac aaggaagtca 300

tgccctccat tcaatccctt gatgcactgg tcaaggaaaa gaagcttcag 350

ggtaagggac caggaggacc acctcccaag ggcctgatgt actcagtcaa 400

cccaaacaaa gtcgatgacc tgagcaagtt cggaaaaaac attgcaaaca 450

tgtgtcgtgg gattccaaca tacatggctg aggagatgca agaggcaagc 500

ctgttttttt actcaggaac gtgctacacg accagtgtac tatggattgt 550

ggacatttcc ttctgtggag acacggtgga gaactaaaca attttttaaa 600

gccactatgg atttagtcat ctgaatatgc tgtgcagaaa aaatatgggc 650

tccagtggtt tttaccatgt cattctgaaa tttttctcta ctagttatgt 700
```

180

<210> 140
<211> 185
<212> PRT
<213> Homosapiens

<400> 140

```
Met Lys Phe Thr Ile Val Phe Ala Gly Leu Leu Gly Val Phe Leu
 1               5                  10                  15

Ala Pro Ala Leu Ala Asn Tyr Asn Ile Asn Val Asn Asp Asp Asn
                20                  25                  30

Asn Asn Ala Gly Ser Gly Gln Gln Ser Val Ser Val Asn Asn Glu
                35                  40                  45

His Asn Val Ala Asn Val Asp Asn Asn Asn Gly Trp Asp Ser Trp
                50                  55                  60

Asn Ser Ile Trp Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu
                65                  70                  75

Phe Gln Lys Lys Thr Cys Ile Val His Lys Met Asn Lys Glu Val
                80                  85                  90

Met Pro Ser Ile Gln Ser Leu Asp Ala Leu Val Lys Glu Lys Lys
                95                  100                 105

Leu Gln Gly Lys Gly Pro Gly Gly Pro Pro Pro Lys Gly Leu Met
                110                 115                 120

Tyr Ser Val Asn Pro Asn Lys Val Asp Asp Leu Ser Lys Phe Gly
                125                 130                 135

Lys Asn Ile Ala Asn Met Cys Arg Gly Ile Pro Thr Tyr Met Ala
                140                 145                 150

Glu Glu Met Gln Glu Ala Ser Leu Phe Phe Tyr Ser Gly Thr Cys
                155                 160                 165

Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile Ser Phe Cys Gly
                170                 175                 180

Asp Thr Val Glu Asn
                185
```

<210> 141
<211> 1297
<212> DNA
<213> Homosapiens

<400> 141

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ggtccttaat ggcagcagcc gccgctacca agatccttct gtgcctcccg 50

cttctgctcc tgctgtccgg ctggtcccgg gctgggcgag ccgaccctca 100

ctctctttgc tatgacatca ccgtcatccc taagttcaga cctggaccac 150

ggtggtgtgc ggttcaaggc caggtggatg aaaagacttt tcttcactat 200

gactgtggca acaagacagt cacacctgtc agtcccctgg ggaagaaact 250
```

```
aaatgtcaca acggcctgga aagcacagaa cccagtactg agagaggtgg 300

tggacatact tacagagcaa ctgcgtgaca ttcagctgga gaattacaca 350

cccaaggaac ccctcaccct gcaggcaagg atgtcttgtg agcagaaagc 400

tgaaggacac agcagtggat cttggcagtt cagtttcgat gggcagatct 450

tcctcctctt tgactcagag aagagaatgt ggacaacggt tcatcctgga 500

gccagaaaga tgaaagaaaa gtgggagaat gacaaggttg tggccatgtc 550

cttccattac ttctcaatgg gagactgtat aggatggctt gaggacttct 600

tgatgggcat ggacagcacc ctggagccaa gtgcaggagc accactcgcc 650

atgtcctcag gcacaaccca actcagggcc acagccacca ccctcatcct 700

ttgctgcctc ctcatcatcc tcccctgctt catcctccct ggcatctgag 750

gagagtcctt tagagtgaca ggttaaagct gataccaaaa ggctcctgtg 800

agcacggtct tgatcaaact cgcccttctg tctggccagc tgcccacgac 850

ctacggtgta tgtccagtgg cctccagcag atcatgatga catcatggac 900

ccaatagctc attcactgcc ttgattcctt ttgccaacaa ttttaccagc 950

agttatacct aacatattat gcaattttct cttggtgcta cctgatggaa 1000

ttcctgcact taaagttctg gctgactaaa caagatatat cattttcttt 1050

cttctctttt tgtttggaaa atcaagtact tctttgaatg atgatctctt 1100

tcttgcaaat gatattgtca gtaaaataat cacgttagac ttcagacctc 1150

tggggattct ttccgtgtcc tgaaagagaa tttttaaatt atttaataag 1200

aaaaaattta tattaatgat tgtttccttt agtaatttat tgttctgtac 1250

tgatatttaa ataaagagtt ctatttccca aaaaaaaaaa aaaaaaa 1297
```

<210> 142
<211> 246
<212> PRT
<213> Homosapiens

<400> 142

```
Met Ala Ala Ala Ala Ala Thr Lys Ile Leu Leu Cys Leu Pro Leu
1               5               10                      15

Leu Leu Leu Leu Ser Gly Trp Ser Arg Ala Gly Arg Ala Asp Pro
            20              25                      30

His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro Lys Phe Arg Pro
            35              40                      45

Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp Glu Lys Thr
            50              55                      60

Phe Leu His Tyr Asp Cys Gly Asn Lys Thr Val Thr Pro Val Ser
            65              70                      75
```

```
Pro Leu Gly Lys Lys Leu Asn Val Thr Thr Ala Trp Lys Ala Gln
            80                  85                  90

Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
            95                 100                 105

Arg Asp Ile Gln Leu Glu Asn Tyr Thr Pro Lys Glu Pro Leu Thr
               110                 115                 120

Leu Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Ser
               125                 130                 135

Ser Gly Ser Trp Gln Phe Ser Phe Asp Gly Gln Ile Phe Leu Leu
               140                 145                 150

Phe Asp Ser Glu Lys Arg Met Trp Thr Thr Val His Pro Gly Ala
               155                 160                 165

Arg Lys Met Lys Glu Lys Trp Glu Asn Asp Lys Val Val Ala Met
               170                 175                 180

Ser Phe His Tyr Phe Ser Met Gly Asp Cys Ile Gly Trp Leu Glu
               185                 190                 195

Asp Phe Leu Met Gly Met Asp Ser Thr Leu Glu Pro Ser Ala Gly
               200                 205                 210

Ala Pro Leu Ala Met Ser Ser Gly Thr Thr Gln Leu Arg Ala Thr
               215                 220                 225

Ala Thr Thr Leu Ile Leu Cys Cys Leu Leu Ile Ile Leu Pro Cys
               230                 235                 240

Phe Ile Leu Pro Gly Ile
               245
```

<210> 143
<211> 1869
<212> DNA
<213> Homosapiens

<400> 143

```
aatgtgagag gggctgatgg aagctgatag gcaggactgg agtgttagca 50

ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100

tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150

gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200

caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250

gcccatggag tgaatgctca cgcacctgcg ggggaggggc ctcctactct 300

ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350

cagaacatgc agtaatgtgg actgcccacc agaagcaggt gatttccgag 400

ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagtttat 450

gaatggcttc ctgtgtctaa tgaccctgac aacccatgtt cactcaagtg 500

ccaagccaaa ggaacaaccc tggttgttga actagcacct aaggtcttag 550
```

```
atggtacgcg ttgctataca gaatctttgg atatgtgcat cagtggttta 600

tgccaaattg ttggctgcga tcaccagctg ggaagcaccg tcaaggaaga 650

taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700

ggcagtataa atcccagctc tccgcaacca aatcggatga tactgtggtt 750

gcacttccct atggaagtag acatattcgc cttgtcttaa aaggtcctga 800

tcacttatat ctggaaacca aaaccctcca ggggactaaa ggtgaaaaca 850

gtctcagctc cacaggaact ttccttgtgg acaattctag tgtggacttc 900

cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950

agatttcatt gtcaagattc gtaactcggg ctccgctgac agtacagtcc 1000

agttcatctt ctatcaaccc atcatccacc gatggaggga gacggatttc 1050

tttccttgct cagcaacctg tggaggaggt tatcagctga catcggctga 1100

gtgctacgat ctgaggagca accgtgtggt tgctgaccaa tactgtcact 1150

attacccaga gaacatcaaa cccaaaccca agcttcagga gtgcaacttg 1200

gatccttgtc cagccagtga cggatacaag cagatcatgc cttatgacct 1250

ctaccatccc cttcctcggt gggaggccac cccatggacc gcgtgctcct 1300

cctcgtgtgg ggggggcatc cagagccggg cagtttcctg tgtggaggag 1350

gacatccagg ggcatgtcac ttcagtggaa gagtggaaat gcatgtacac 1400

ccctaagatg cccatcgcgc agccctgcaa cattttgac tgccctaaat 1450

ggctggcaca ggagtggtct ccgtgcacag tgacatgtgg ccaggcctc 1500

agataccgtg tggtcctctg catcgaccat cgaggaatgc acacaggagg 1550

ctgtagccca aaaacaaagc cccacataaa agaggaatgc atcgtaccca 1600

ctccctgcta taaacccaaa gagaaacttc cagtcgaggc caagttgcca 1650

tggttcaaac aagctcaaga gctagaagaa ggagctgctg tgtcagagga 1700

gccctcgtaa gttgtaaaag cacagactgt tctatatttg aaactgtttt 1750

gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800

taagtgtaat catctcacca aagctttttg gctctcaaat taaagattga 1850

ttagtttcaa aaaaaaaaa 1869
```

<210> 144
<211> 525
<212> PRT
<213> Homosapiens

<400> 144
```
Met Glu Cys Cys Arg Arg Ala Thr Pro Gly Thr Leu Leu Leu Phe
 1               5                  10                  15
```

```
Leu Ala Phe Leu Leu Leu Ser Ser Arg Thr Ala Arg Ser Glu Glu
              20              25              30

Asp Arg Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp Ser Glu Cys
              35              40              45

Ser Arg Thr Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg Arg Cys
              50              55              60

Leu Ser Ser Lys Ser Cys Glu Gly Arg Asn Ile Arg Tyr Arg Thr
              65              70              75

Cys Ser Asn Val Asp Cys Pro Pro Glu Ala Gly Asp Phe Arg Ala
              80              85              90

Gln Gln Cys Ser Ala His Asn Asp Val Lys His His Gly Gln Phe
              95              100             105

Tyr Glu Trp Leu Pro Val Ser Asn Asp Pro Asp Asn Pro Cys Ser
              110             115             120

Leu Lys Cys Gln Ala Lys Gly Thr Thr Leu Val Val Glu Leu Ala
              125             130             135

Pro Lys Val Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp
              140             145             150

Met Cys Ile Ser Gly Leu Cys Gln Ile Val Gly Cys Asp His Gln
              155             160             165

Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly Val Cys Asn Gly
              170             175             180

Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr Lys Ser Gln
              185             190             195

Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Leu Pro Tyr
              200             205             210

Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His Leu
              215             220             225

Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser
              230             235             240

Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Val Asp
              245             250             255

Phe Gln Lys Phe Pro Asp Lys Glu Ile Leu Arg Met Ala Gly Pro
              260             265             270

Leu Thr Ala Asp Phe Ile Val Lys Ile Arg Asn Ser Gly Ser Ala
              275             280             285

Asp Ser Thr Val Gln Phe Ile Phe Tyr Gln Pro Ile Ile His Arg
              290             295             300

Trp Arg Glu Thr Asp Phe Phe Pro Cys Ser Ala Thr Cys Gly Gly
              305             310             315

Gly Tyr Gln Leu Thr Ser Ala Glu Cys Tyr Asp Leu Arg Ser Asn
              320             325             330
```

185

```
Arg Val Val Ala Asp Gln Tyr Cys His Tyr Tyr Pro Glu Asn Ile
              335                 340                 345

Lys Pro Lys Pro Lys Leu Gln Glu Cys Asn Leu Asp Pro Cys Pro
              350                 355                 360

Ala Ser Asp Gly Tyr Lys Gln Ile Met Pro Tyr Asp Leu Tyr His
              365                 370                 375

Pro Leu Pro Arg Trp Glu Ala Thr Pro Trp Thr Ala Cys Ser Ser
              380                 385                 390

Ser Cys Gly Gly Gly Ile Gln Ser Arg Ala Val Ser Cys Val Glu
              395                 400                 405

Glu Asp Ile Gln Gly His Val Thr Ser Val Glu Glu Trp Lys Cys
              410                 415                 420

Met Tyr Thr Pro Lys Met Pro Ile Ala Gln Pro Cys Asn Ile Phe
              425                 430                 435

Asp Cys Pro Lys Trp Leu Ala Gln Glu Trp Ser Pro Cys Thr Val
              440                 445                 450

Thr Cys Gly Gln Gly Leu Arg Tyr Arg Val Val Leu Cys Ile Asp
              455                 460                 465

His Arg Gly Met His Thr Gly Gly Cys Ser Pro Lys Thr Lys Pro
              470                 475                 480

His Ile Lys Glu Glu Cys Ile Val Pro Thr Pro Cys Tyr Lys Pro
              485                 490                 495

Lys Glu Lys Leu Pro Val Glu Ala Lys Leu Pro Trp Phe Lys Gln
              500                 505                 510

Ala Gln Glu Leu Glu Glu Gly Ala Ala Val Ser Glu Glu Pro Ser
              515                 520                 525
```

<210> 145
<211> 1969
<212> DNA
<213> Homosapiens

<400> 145
```
 ggaggaggga gggcgggcag gcgccagccc agagcagccc cgggcaccag 50

 cacggactct ctcttccagc ccaggtgccc cccactctcg ctccattcgg 100

 cgggagcacc cagtcctgta cgccaaggaa ctggtcctgg gggcaccatg 150

 gtttcggcgg cagcccccag cctcctcatc cttctgttgc tgctgctggg 200

 gtctgtgcct gctaccgacg cccgctctgt gccctgaag gccacgttcc 250

 tggaggatgt ggcgggtagt ggggaggccg agggctcgtc ggcctcctcc 300

 ccgagcctcc cgccaccctg accccggcc ctcagcccca catcgatggg 350

 gccccagccc acaaccctgg ggggcccatc accccccacc aacttcctgg 400

 atgggatagt ggacttcttc cgccagtacg tgatgctgat tgctgtggtg 450
```

186

```
ggctccctgg cctttctgct gatgttcatc gtctgtgccg cggtcatcac 500

ccggcagaag cagaaggcct cggcctatta cccatcgtcc ttccccaaga 550

agaagtacgt ggaccagagt gaccgggccg ggggcccccg ggccttcagt 600

gaggtccccg acagagcccc cgacagcagg cccgaggaag ccctggattc 650

ctcccggcag ctccaggccg acatcttggc cgccacccag aacctcaagt 700

cccccaccag ggctgcactg ggcggtgggg acggagccag gatggtggag 750

ggcagggggcg cagaggaaga ggagaagggc agccaggagg gggaccagga 800

agtccaggga catggggtcc cagtggagac accagaggcg caggaggagc 850

cgtgctcagg ggtccttgag ggggctgtgg tggccggtga gggccaaggg 900

gagctggaag ggtctctctt gttagcccag gaagcccagg accagtgggg 950

tcccccccgaa agcccctgtg cttgcagcag tgtccacccc agtgtctaac 1000

agtcctcccg ggctgccagc cctgactgtc gggcccccaa gtggtcacct 1050

ccccgtgtat gaaaaggcct tcagccctga ctgcttcctg acactccctc 1100

cttggcctcc ctgtggtgcc aatcccagca tgtgctgatt ctacagcagg 1150

cagaaatgct ggtccccggt gccccggagg aatcttacca agtgccatca 1200

tccttcacct cagcagcccc aaagggctac atcctacagc acagctcccc 1250

tgacaaagtg agggagggca cgtgtccctg tgacagccag gataaaacat 1300

cccccaaagt gctgggatta caggcgtgag ccaccgtgcc cggcccaaac 1350

tacttttttaa aacagctaca gggtaaaatc ctgcagcacc cactctggaa 1400

aatactgctc ttaattttcc tgaaggtggc cccctgtttc tagttggtcc 1450

aggattaggg atgtggggta tagggcattt aaatcctctc aagcgctctc 1500

caagcacccc cggcctggggg gtgagtttct catcccgcta ctgctgctgg 1550

gatcaggttg aatgaatgga actcttcctg tctggcctcc aaagcagcct 1600

agaagctgag gggctgtgtt tgaggggacc tccaccctgg ggaagtccga 1650

ggggctgggg aagggtttct gacgcccagc ctggagcagg ggggccctgg 1700

ccacccccctg ttgctcacac attgtctggc agcctgtgtc cacaatattc 1750

gtcagtcctc gacagggagc ctgggctccg tcctgcttta gggaggctct 1800

ggcaggaggt cctctccccc atccctccat ctggggctcc cccaacctct 1850

gcacagctct ccaggtgctg agatataatg caccagcaca ataaaccttt 1900

attccggcct gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1950

aaaaaaaaaa aaaaaaaga 1969
```

<210> 146

<211> 283
<212> PRT
<213> Homosapiens

<400> 146

```
Met Val Ser Ala Ala Ala Pro Ser Leu Leu Ile Leu Leu Leu Leu
 1               5                  10                      15

Leu Leu Gly Ser Val Pro Ala Thr Asp Ala Arg Ser Val Pro Leu
                20              25                      30

Lys Ala Thr Phe Leu Glu Asp Val Ala Gly Ser Gly Glu Ala Glu
                35              40                      45

Gly Ser Ser Ala Ser Ser Pro Ser Leu Pro Pro Pro Trp Thr Pro
                50              55                      60

Ala Leu Ser Pro Thr Ser Met Gly Pro Gln Pro Thr Thr Leu Gly
                65              70                      75

Gly Pro Ser Pro Pro Thr Asn Phe Leu Asp Gly Ile Val Asp Phe
                80              85                      90

Phe Arg Gln Tyr Val Met Leu Ile Ala Val Val Gly Ser Leu Ala
                95              100                     105

Phe Leu Leu Met Phe Ile Val Cys Ala Ala Val Ile Thr Arg Gln
                110             115                     120

Lys Gln Lys Ala Ser Ala Tyr Tyr Pro Ser Ser Phe Pro Lys Lys
                125             130                     135

Lys Tyr Val Asp Gln Ser Asp Arg Ala Gly Gly Pro Arg Ala Phe
                140             145                     150

Ser Glu Val Pro Asp Arg Ala Pro Asp Ser Arg Pro Glu Glu Ala
                155             160                     165

Leu Asp Ser Ser Arg Gln Leu Gln Ala Asp Ile Leu Ala Ala Thr
                170             175                     180

Gln Asn Leu Lys Ser Pro Thr Arg Ala Ala Leu Gly Gly Gly Asp
                185             190                     195

Gly Ala Arg Met Val Glu Gly Arg Gly Ala Glu Glu Glu Glu Lys
                200             205                     210

Gly Ser Gln Glu Gly Asp Gln Glu Val Gln Gly His Gly Val Pro
                215             220                     225

Val Glu Thr Pro Glu Ala Gln Glu Glu Pro Cys Ser Gly Val Leu
                230             235                     240

Glu Gly Ala Val Val Ala Gly Glu Gly Gln Gly Glu Leu Glu Gly
                245             250                     255

Ser Leu Leu Leu Ala Gln Glu Ala Gln Gly Pro Val Gly Pro Pro
                260   ·         265                     270

Glu Ser Pro Cys Ala Cys Ser Ser Val His Pro Ser Val
                275             280
```

<210> 147

<211> 860
<212> DNA
<213> Homosapiens

<400> 147
 gaaagacgtg gtcctgacag acagacaatc ctattcccta ccaaaatgaa 50

 gatgctgctg ctgctgtgtt tgggactgac cctagtctgt gtccatgcag 100

 aagaagctag ttctacggga aggaactta atgtagaaaa gattaatggg 150

 gaatggcata ctattatcct ggcctctgac aaaagagaaa agatagaaga 200

 acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250

 ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300

 tctatggttg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350

 tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400

 ttatggctca cctcattaac gaaaaggatg gggaaacctt ccagctgatg 450

 gggctctatg ccgagaacc agatttgagt tcagacatca aggaaaggtt 500

 tgcacaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550

 tatccaatgc caatcgctgc ctccaggccc gagaatgaag aatggcctga 600

 gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650

 tcctatccat acagcatccc cagtataaat tctgtgatct gcattccatc 700

 ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750

 acctcatcaa gaatcaaaga cttctttaaa tttctctttg atacaccctt 800

 gacaattttt catgaaatta ttcctcttcc tgttcaataa atgattaccc 850

 ttgcacttaa 860

<210> 148
<211> 180
<212> PRT
<213> Homosapiens

<400> 148
 Met Lys Met Leu Leu Leu Leu Cys Leu Gly Leu Thr Leu Val Cys
 1               5               10                  15

 Val His Ala Glu Glu Ala Ser Ser Thr Gly Arg Asn Phe Asn Val
                 20              25                  30

 Glu Lys Ile Asn Gly Glu Trp His Thr Ile Ile Leu Ala Ser Asp
                 35              40                  45

 Lys Arg Glu Lys Ile Glu Glu His Gly Asn Phe Arg Leu Phe Leu
                 50              55                  60

 Glu Gln Ile His Val Leu Glu Asn Ser Leu Val Leu Lys Val His
                 65              70                  75

 Thr Val Arg Asp Glu Glu Cys Ser Glu Leu Ser Met Val Ala Asp

189

```
Lys Thr Glu Lys Ala Gly Glu Tyr Ser Val Thr Tyr Asp ·Gly Phe
                95                      100                     105

Asn Thr Phe Thr Ile Pro Lys Thr Asp Tyr Asp Asn Phe Leu Met
                110                     115                     120

Ala His Leu Ile Asn Glu Lys Asp Gly Glu Thr Phe Gln Leu Met
                125                     130                     135

Gly Leu Tyr Gly Arg Glu Pro Asp Leu Ser Ser Asp Ile Lys Glu
                140                     145                     150

Arg Phe Ala Gln Leu Cys Glu Glu His Gly Ile Leu Arg Glu Asn
                155                     160                     165

Ile Ile Asp Leu Ser Asn Ala Asn Arg Cys Leu Gln Ala Arg Glu
                170                     175                     180
```

<210> 149
<211> 1734
<212> DNA
<213> Homosapiens

<400> 149
```
gtggactctg agaagcccag gcagttgagg acaggagaga gaaggctgca 50

gacccagagg gagggaggac agggagtcgg aaggaggagg acagaggagg 100

gcacagagac gcagagcaag ggcggcaagg aggagaccct ggtgggagga 150

agacactctg gagagagagg gggctgggca gagatgaagt tccagggggcc 200

cctggcctgc ctcctgctgg ccctctgcct gggcagtggg gaggctggcc 250

ccctgcagag cggagaggaa agcactggga caaatattgg ggaggcccctt 300

ggacatggcc tgggagacgc cctgagcgaa ggggtgggaa aggccattgg 350

caaagaggcc ggaggggcag ctggctctaa agtcagtgag gcccttggcc 400

aagggaccag agaagcagtt ggcactggag tcaggcaggt tccaggctttt 450

ggcgcagcag atgctttggg caacagggtc ggggaagcag cccatgctct 500

gggaaacact gggcacgaga ttggcagaca ggcagaagat gtcattcgac 550

acggagcaga tgctgtccgc ggctcctggc agggggtgcc tggccacagt 600

ggtgcttggg aaacttctgg aggccatggc atctttggct ctcaaggtgg 650

ccttggaggc cagggccagg gcaatcctgg aggtctgggg actccgtggg 700

tccacggata ccccggaaac tcagcaggca gctttggaat gaatcctcag 750

ggagctccct ggggtcaagg aggcaatgga gggccaccaa actttgggac 800

caacactcag ggagctgtgg cccagcctgg ctatggttca gtgagagcca 850

gcaaccagaa tgaagggtgc acgaatcccc caccatctgg ctcaggtgga 900

ggctccagca actctggggg aggcagcggc tcacagtcgg gcagcagtgg 950
```

190

```
cagtggcagc aatggtgaca acaacaatgg cagcagcagt ggtggcagca 1000

gcagtggcag cagcagtggc agcagcagtg cggcagcag tggcggcagc 1050

agtggtggca gcagtggcaa cagtggtggc agcagaggtg acagcggcag 1100

tgagtcctcc tggggatcca gcaccggctc ctcctccggc aaccacggtg 1150

ggagcggcgg aggaaatgga cataaacccg ggtgtgaaaa gccagggaat 1200

gaagcccgcg ggagcgggga atctgggatt cagggcttca gaggacaggg 1250

agtttccagc aacatgaggg aaataagcaa agagggcaat cgcctccttg 1300

gaggctctgg agacaattat cgggggcaag ggtcgagctg gggcagtgga 1350

ggaggtgacg ctgttggtgg agtcaatact gtgaactctg agacgtctcc 1400

tgggatgttt aactttgaca ctttctggaa gaattttaaa tccaagctgg 1450

gtttcatcaa ctgggatgcc ataaacaagg accagagaag ctctcgcatc 1500

ccgtgacctc cagacaagga gccaccagat tggatgggag cccccacact 1550

ccctccttaa aacaccaccc tctcatcact aatctcagcc cttgcccttg 1600

aaataaacct tagctgcccc acaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1734
```

<210> 150
<211> 440
<212> PRT
<213> Homosapiens

<400> 150

```
Met Lys Phe Gln Gly Pro Leu Ala Cys Leu Leu Leu Ala Leu Cys
 1               5                  10                      15

Leu Gly Ser Gly Glu Ala Gly Pro Leu Gln Ser Gly Glu Glu Ser
                20                  25                      30

Thr Gly Thr Asn Ile Gly Glu Ala Leu Gly His Gly Leu Gly Asp
                   35                  40                      45

Ala Leu Ser Glu Gly Val Gly Lys Ala Ile Gly Lys Glu Ala Gly
                50                  55                      60

Gly Ala Ala Gly Ser Lys Val Ser Glu Ala Leu Gly Gln Gly Thr
                65                  70                      75

Arg Glu Ala Val Gly Thr Gly Val Arg Gln Val Pro Gly Phe Gly
                80                  85                      90

Ala Ala Asp Ala Leu Gly Asn Arg Val Gly Glu Ala Ala His Ala
                95                  100                     105

Leu Gly Asn Thr Gly His Glu Ile Gly Arg Gln Ala Glu Asp Val
                110                 115                     120

Ile Arg His Gly Ala Asp Ala Val Arg Gly Ser Trp Gln Gly Val
```

191

```
                125                      130                      135
Pro Gly His Ser Gly Ala Trp Glu Thr Ser Gly Gly His Gly Ile
                140                      145                      150
Phe Gly Ser Gln Gly Gly Leu Gly Gly Gln Gly Gln Gly Asn Pro
                155                      160                      165
Gly Gly Leu Gly Thr Pro Trp Val His Gly Tyr Pro Gly Asn Ser
                170                      175                      180
Ala Gly Ser Phe Gly Met Asn Pro Gln Gly Ala Pro Trp Gly Gln
                185                      190                      195
Gly Gly Asn Gly Gly Pro Pro Asn Phe Gly Thr Asn Thr Gln Gly
                200                      205                      210
Ala Val Ala Gln Pro Gly Tyr Gly Ser Val Arg Ala Ser Asn Gln
                215                      220                      225
Asn Glu Gly Cys Thr Asn Pro Pro Pro Ser Gly Ser Gly Gly Gly
                230                      235                      240
Ser Ser Asn Ser Gly Gly Gly Ser Gly Ser Gln Ser Gly Ser Ser
                245                      250                      255
Gly Ser Gly Ser Asn Gly Asp Asn Asn Asn Gly Ser Ser Ser Gly
                260                      265                      270
Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser Gly Gly Ser
                275                      280                      285
Ser Gly Gly Ser Ser Gly Gly Ser Ser Gly Asn Ser Gly Gly Ser
                290                      295                      300
Arg Gly Asp Ser Gly Ser Glu Ser Ser Trp Gly Ser Ser Thr Gly
                305                      310                      315
Ser Ser Ser Gly Asn His Gly Gly Ser Gly Gly Gly Asn Gly His
                320                      325                      330
Lys Pro Gly Cys Glu Lys Pro Gly Asn Glu Ala Arg Gly Ser Gly
                335                      340                      345
Glu Ser Gly Ile Gln Gly Phe Arg Gly Gln Gly Val Ser Ser Asn
                350                      355                      360
Met Arg Glu Ile Ser Lys Glu Gly Asn Arg Leu Leu Gly Gly Ser
                365                      370                      375
Gly Asp Asn Tyr Arg Gly Gln Gly Ser Ser Trp Gly Ser Gly Gly
                380                      385                      390
Gly Asp Ala Val Gly Gly Val Asn Thr Val Asn Ser Glu Thr Ser
                395                      400                      405
Pro Gly Met Phe Asn Phe Asp Thr Phe Trp Lys Asn Phe Lys Ser
                410                      415                      420
Lys Leu Gly Phe Ile Asn Trp Asp Ala Ile Asn Lys Asp Gln Arg
                425                      430                      435
Ser Ser Arg Ile Pro
```

192

<210> 151
<211> 1332
<212> DNA
<213> Homosapiens

<400> 151
```
cggccacagc tggcatgctc tgcctgatcg ccatcctgct gtatgtcctc 50

gtccagtacc tcgtgaaccc cggggtgctc cgcacggacc ccagatgtca 100

agaatatgaa cacgtggctg ctgttcctcc ccctgttccc ggtgcaggtg 150

cagaccctga tagtcgtgat catcgggatg ctcgtgctcc tgctggactt 200

tcttggcttg gtgcacctgg ccagctgct catcttccac atctacctga 250

gtatgtcccc caccctaagc ccccgatccc cccaaggctg ggtggtcaga 300

gctgctcatc ttacacctct acttgagtat gtccctaacc ctgagccccc 350

cacgcctggg gccagagtct ttgtcccccg tgtgcgcatg tgttcagggt 400

cagcctctcc cagaagtgag atcatggaca aaaagggcaa atcacaggaa 450

gaaattaaat ccatgaggac ccagcaggcc cagcaagaag ctgaactcac 500

gccgagacct gcaggagtgg tgccaggtgc ttgaagtaac aagtttaaaa 550

tgttcagaga caatggaatg gaatctatta ggcaagaaca ggacattatg 600

aaataaggac aggtggactt ccaaaaacac aagtagaaat tctaacaatg 650

aaatatatta caggcaggtc acccactaac caaacaactg aagcgagagc 700

tgtggtcttg cttggtctca cagtgggcac agcggtaggc ggtcagtcat 750

gttgctgaac gacggagggt aaactcccca gccccaagaa aacctgtgtt 800

ggaagtaaca acaacctccc tgctcctggc accagccgtt ttggtcatgg 850

tgggccagct gcaaagcgtc ttccattctc tgggcagtgg tggccccgag 900

gctgtggcct ctcaggggt ttctgtggac acgggcagca gagtgtgtcc 950

aggccagccc ccaagaatgc cctgctcctg acagcttggc caacccctgg 1000

tcagggcaga gggagttggg tgggtcaggc tctgggctca cctccatctc 1050

cagagcatcc cctgcctgca gttgtggcaa gaacgcccag ctcagaatga 1100

acacacccca ccaagagcct ccttgttcat aaccacaggt taccctacaa 1150

accactgtcc ccacacaacc ctggggatgt tttaaaacac acacctctaa 1200

cgcatatctt acagtcactg ttgtcttgcc tgagggttga attttttta 1250

atgaaagtgc aatgaaaatc actggattaa atcctacgga cacagagctg 1300

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1332
```

<210> 152

<211> 142
<212> PRT
<213> Homosapiens

<400> 152

```
Met Asn Thr Trp Leu Leu Phe Leu Pro Leu Phe Pro Val Gln Val
 1               5                  10                  15

Gln Thr Leu Ile Val Val Ile Ile Gly Met Leu Val Leu Leu Leu
                20                  25                  30

Asp Phe Leu Gly Leu Val His Leu Gly Gln Leu Leu Ile Phe His
                35                  40                  45

Ile Tyr Leu Ser Met Ser Pro Thr Leu Ser Pro Arg Ser Pro Gln
                50                  55                  60

Gly Trp Val Val Arg Ala Ala His Leu Thr Pro Leu Leu Glu Tyr
                65                  70                  75

Val Pro Asn Pro Glu Pro Pro Thr Pro Gly Ala Arg Val Phe Val
                80                  85                  90

Pro Arg Val Arg Met Cys Ser Gly Ser Ala Ser Pro Arg Ser Glu
                95                  100                 105

Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met
                110                 115                 120

Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro
                125                 130                 135

Ala Gly Val Val Pro Gly Ala
                140
```

<210> 153
<211> 1158
<212> DNA
<213> Homosapiens

<400> 153

```
aactggaagg aaagaaagaa aggtcagctt tggcccagat gtggttaccc 50

cttggtctcc tgtctttatg tctttctcct cttcctattc tgtcatctcc 100

ctcacttaag tctcaggcct gtcagcagct cctgtggaca ttgccatccc 150

ctctggtagc cttcagagca aacaggacaa cctatgttat ggatgtttcc 200

accaaccagg gtagtggcat ggagcaccgt aaccatctgt gcttctgtga 250

tctctatgac agagccactt ctccacctct gaaatgttcc ctgctctgaa 300

atctggcatg agatggcaca ggtgaccacg cagaagccac cagaatcttg 350

cctgccctat tcctcctccc aagtctgttc tcttattgtc aacctcagca 400

caacaggctg gcgccaatgg cattacagag aaagcaatct gtgtggctag 450

tgggcagatt accatgcaag ccccaggaga aatggaggag ctttgtagcc 500

acctccctgt cagccagtat taacatgtcc ccttcccccct gccccgccgt 550
```

194

```
agattcagga cattcgcccc tgtgtgccac caaaccagga ctttcccctt 600

ggcttggcat ccctggctct ctcctggtac ccagcaagac gtctgttcca 650

gggcagtgta gcatctttca agctccgtta ctatggcgat ggccatgatg 700

ttacaatccc acttgcctga ataatcaagt gggaagggga agcagaggga 750

aatggggcca tgtgaatgca gctgctctgt tctccctacc ctgaggaaaa 800

accaaaggga agcaacagga acttctgcaa ctggttttta tcggaaagat 850

catcctgcct gcagatgctg ttgaaggggc acaagaaatg tagctggaga 900

agattgatga aagtgcaggt gtgtaaggaa atagaacagt ctgctgggag 950

tcagacctgg aattctgatt ccaaactctt tattactttg ggaagtcact 1000

cagcctcccc gtagccatct ccagggtgac ggaacccagt gtattacctg 1050

ctggaaccaa ggaaactaac aatgtaggtt actagtgaat accccaatgg 1100

tttctccaat tatgcccatg ccaccaaaac aataaaacaa aattctctaa 1150

cactgaaa 1158
```

<210> 154
<211> 86
<212> PRT
<213> Homosapiens

<400> 154

```
Met Trp Leu Pro Leu Gly Leu Leu Ser Leu Cys Leu Ser Pro Leu
 1               5                  10                  15

Pro Ile Leu Ser Ser Pro Ser Leu Lys Ser Gln Ala Cys Gln Gln
                20                  25                  30

Leu Leu Trp Thr Leu Pro Ser Pro Leu Val Ala Phe Arg Ala Asn
                35                  40                  45

Arg Thr Thr Tyr Val Met Asp Val Ser Thr Asn Gln Gly Ser Gly
                50                  55                  60

Met Glu His Arg Asn His Leu Cys Phe Cys Asp Leu Tyr Asp Arg
                65                  70                  75

Ala Thr Ser Pro Pro Leu Lys Cys Ser Leu Leu
                80                  85
```

<210> 155
<211> 2694
<212> DNA
<213> Homosapiens

<400> 155

```
gtagcgcgtc ttgggtctcc cggctgccgc tgctgccgcc gccgcctcgg 50

gtcgtggagc caggagcgac gtcaccgcca tggcaggcat caaagctttg 100

attagtttgt cctttggagg agcaatcgga ctgatgtttt tgatgcttgg 150

atgtgccctt ccaatataca acaaatactg gcccctcttt gttctatttt 200
```

195

```
tttacatcct ttcacctatt ccatactgca tagcaagaag attagtggat 250

gatacagatg ctatgagtaa cgcttgtaag gaacttgcca tctttcttac 300

aacgggcatt gtcgtgtcag cttttggact ccctattgta tttgccagag 350

cacatctgat tgagtggggga gcttgtgcac ttgttctcac aggaaacaca 400

gtcatctttg caactatact aggcttttc ttggtctttg gaagcaatga 450

cgacttcagc tggcagcagt ggtgaaaaga aattactgaa ctattgtcaa 500

atggacttcc tgtcatttgt tggccattca cgcacacagg agatggggca 550

gttaatgctg aatggtatag caagcctctt gggggtattt taggtgctcc 600

cttctcactt ttattgtaag catactattt tcacagagac ttgctgaagg 650

attaaaagga ttttctcttt tggaaaagct tgactgattt cacacttatc 700

tatagtatgc ttttgtggt gtcctgctga atttaaatat ttatgtgttt 750

ttcctgttag gttgattttt tttggaatca atatgcaatg ttaaacactt 800

ttttaatgta atcatttgca ttggttagga attcagaatt ccgccggctc 850

tattactggt caagtacatc ttttctctta aaattattta gcctccatta 900

ttacaaaaaa ttataaaaat aagttttcag tcagtcagga tgacatcact 950

cccaatgtta tgcagacata cagacggttg gcatacgtta tagactgtat 1000

actcagtgca aatatagctg catttatacc tcagaggggc caagtgttaa 1050

tgcccatgcc ctccgttaag ggttgttggt tttactggta gacagatgtt 1100

ttgtggattg aaaattattt tatggaattg ctacagagga gtgcttttct 1150

tctcaattgt tagaagaatt tatgttaaac tttaaggtaa gggtgtaaaa 1200

acattttga dataaggttt ttatttatgt ttattattgt tagagtgagt 1250

tgcaatgtgg gaagaaatga cattgaaatt ccagtttttg aatcctgttt 1300

ctatttataa gtgaaatttg tgatctccta tcaacctttc atgttttacc 1350

ctgttaaaat ggacatacat ggaaccacta ctgatgaggg acagttgtat 1400

gtttgcatca tatatgccag aaaaccttcc tctgcttcct ccttttgact 1450

tatttggtat gttgtatata ttacataaaa taacttttca aatatagttt 1500

aataacactt agaagtgttt acttacctgg aaaataattg ctatgccgta 1550

cattcagagt gcccctccc ctgcaaggcc ttgccatgat taacaagtaa 1600

cttgttagtc ttacagataa ttcatgcatt aacagtttaa gatttagacc 1650

atggtaatag tagttcttat tctctaaggt tatatcatat gtaatttaaa 1700

agtattttta agacaagttt cctgtatacc tctgaactgt tttgattttg 1750

agttcatcat gatagatctg ctgtttcctt ataaaaggca tttgttgtgt 1800
```

```
gagttaatgc aaagtagcca agtccagcta tatagcagct tcagaaacat 1850

acctgaccaa aaaattccca gtaaccaggc atgatcaatt tatagtggtc 1900

gtttacatct aataattatc aggacttttt tcaggagtgg gttataaaaa 1950

cattcaagtt ggtctgacag tattttgtta aggatatttg tttgtatgtt 2000

tattcagtat acttacataa aaattatttc gccatcagcc aaaactcagt 2050

aatcatgaca gctgtctgtt gttttatgaa gtttatttct caagaaaatg 2100

ggaataaatt tgggatttgt tcagcttttt tactaaagat gcctaaagcc 2150

acaggtttta ttgcctaact taagccatga cttttagata tgagatgacg 2200

ggaagcagga cgaaatatcg gcgtgtggct ggagccttcc cactggaggc 2250

tgaaagtggc ttgtggtatt ataatgttca gatttcaaga ggaaggtgca 2300

ggtacacatg agttagagag ctggtgagac agttgggaac tctttgtgct 2350

tgtgatctac tggacttttt ttttgcagga agtgcattct ctggtccttc 2400

cctattttct gttctggatg tcagtgcagt gcactgctac tgttttatcc 2450

acttggccac agactttttc taacagctgc gtattatttc tatatactaa 2500

ttgcattggc agcattgtgt ctttgacctt gtatactagc ttgacatagt 2550

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atatgcactg atacaacatt accattcttc tatggaaaga aaacttttga 2650

tgatgaaaca ataaagattt taaatatcta ttttaaaaaa aaaa 2694
```

<210> 156
<211> 131
<212> PRT
<213> Homosapiens

<400> 156

```
Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala
 1               5                  10                  15

Ile Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr
                20                  25                  30

Asn Lys Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser
                35                  40                  45

Pro Ile Pro Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp
                50                  55                  60

Ala Met Ser Asn Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr
                65                  70                  75

Gly Ile Val Val Ser Ala Phe Gly Leu Pro Ile Val Phe Ala Arg
                80                  85                  90

Ala His Leu Ile Glu Trp Gly Ala Cys Ala Leu Val Leu Thr Gly
                95                  100                 105
```

197

```
Asn Thr Val Ile Phe Ala Thr Ile Leu Gly Phe Phe Leu Val Phe
                110               115               120

Gly Ser Asn Asp Asp Phe Ser Trp Gln Gln Trp
                125               130
```

<210> 157
<211> 4277
<212> DNA
<213> Homosapiens

<400> 157

```
gtttctcata gttggcgtct tctaaaggaa aaacactaaa atgaggaact   50

cagcggaccg ggagcgacgc agcttgaggg aagcatccct agctgttggc  100

gcagaggggc gaggctgaag ccgagtggcc cgaggtgtct gaggggctgg  150

ggcaaaggtg aaagagtttc agaacaagct tcctggaacc catgacccat  200

gaagtcttgt cgacatttat accgtctgag ggtagcagct cgaaactaga  250

agaagtggag tgttgccagg acggcagta tctctttgtg tgaccctggc   300

ggcctatggg acgttggctt cagacctttg tgatacacca tgctgcgtgg  350

gacgatgacg gcgtggagag gaatgaggcc tgaggtcaca ctggcttgcc  400

tcctcctagc cacagcaggc tgctttgctg acttgaacga ggtccctcag  450

gtcaccgtcc agcctgcgtc caccgtccag aagcccggag gcactgtgat  500

cttgggctgc gtggtggaac ctccaaggat gaatgtaacc tggcgcctga  550

atggaaagga gctgaatggc tcggatgatg ctctgggtgt cctcatcacc  600

cacgggaccc tcgtcatcac tgcccttaac aaccacactg tgggacggta  650

ccagtgtgtg gcccggatgc ctgcgggggc tgtggccagc gtgccagcca  700

ctgtgacact agccaatctc caggacttca gttagatgt gcagcacgtg   750

attgaagtgg atgagggaaa cacagcagtc attgcctgcc acctgcctga  800

gagccacccc aaagcccagg tccggtacag cgtcaaacaa gagtggctgg  850

aggcctccag aggtaactac ctgatcatgc cctcaggaa cctccagatt   900

gtgaatgcca gccaggagga cgagggcatg tacaagtgtg cagcctacaa  950

cccagtgacc caggaagtga aacctccggg ctccagcgac aggctacgtg 1000

tgcgccgctc caccgctgag gctgcccgca tcatctaccc cccagaggcc 1050

caaaccatca tcgtcaccaa aggccagagt ctcattctgg agtgtgtggc 1100

cagtggaatc ccaccccac gggtcacctg ggccaaggat gggtccagtg  1150

tcaccggcta caacaagacg cgcttcctgc tgagcaacct cctcatcgac 1200

accaccagcg aggaggactc aggcacctac cgctgcatgg ccgacaatgg 1250

ggttgggcag cccggggcag cggtcatcct ctacaatgtc caggtgtttg 1300
```

```
aacccccctga ggtcaccatg gagctatccc agctggtcat cccctggggc 1350

cagagtgcca agcttacctg tgaggtgcgt gggaacccccc cgccctccgt 1400

gctgtggctg aggaatgctg tgcccctcat ctccagccag cgcctccggc 1450

tctcccgcag ggccctgcgc gtgctcagca tggggcctga ggacgaaggc 1500

gtctaccagt gcatggccga aacgaggtt gggagcgccc atgccgtagt 1550

ccagctgcgg acctccaggc caagcataac cccaaggcta tggcaggatg 1600

ctgagctggc tactggcaca cctcctgtat caccctccaa actcggcaac 1650

cctgagcaga tgctgagggg gcaaccggcg ctccccagac ccccaacgtc 1700

agtggggcct gcttccccga agtgtccagg agagaagggg caggggggctc 1750

ccgccgaggc tcccatcatc ctcagctcgc cccgcacctc caagacagac 1800

tcatatgaac tggtgtggcg gcctcggcat gagggcagtg gccgggcgcc 1850

aatcctctac tatgtggtga aacaccgcaa gcaggtcaca aattcctctg 1900

acgattggac catctctggc attccagcca accagcaccg cctgaccctc 1950

accagacttg accccgggag cttgtatgaa gtggagatgg cagcttacaa 2000

ctgtgcggga gagggccaga cagccatggt caccttccga actggacggc 2050

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gaccctggag ccagtcccca gagcagcagc cagccagacc acggccgcct 2150

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cctcagtgta cgtgacctgg attccccgtg ggaatggtgg gttcccaatc 2250

cagtccttcc gtgtggagta caagaagcta aagaaagtgg gagactggat 2300

tctggccacc agcgccatcc ccccatcgcg gctgtccgtg gagatcacgg 2350

gcctagagaa aggcacctcc tacaagtttc gagtccgggc tctgaacatg 2400

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gacattaaga tgcagtgctt caatgaagga ggggagagcg agttcagcaa 2750

cgtgatgatc tgtgagacca agctcggaa gtcttctggc cagcctggtc 2800

gactgccacc cccaactctg gccccaccac agccgcccct tcctgaaacc 2850

atagagcggc cggtgggcac tggggccatg gtggctcgct ccagcgacct 2900
```

```
gccctatctg attgtcgggg tcgtcctggg ctccatcgtt ctcatcatcg 2950

tcaccttcat ccccttctgc ttgtggaggg cctggtctaa gcaaaaacat 3000

acaacagacc tgggttttcc tcgaagtgcc cttccaccct cctgcccgta 3050

tactatggtg ccattgggag gactcccagg ccaccaggcc agtggacagc 3100

cctacctcag tggcatcagt ggacgggcct gtgctaatgg gatccacatg 3150

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gcagcactgc ccaggcgagc ttcagcagca gagtgacacc agcagcctgc 3250

tgaggcagac ccatcttggc aatggatatg accccaaag tcaccagatc 3300

acgaggggtc ccaagtctag cccggacgag ggctctttct tatacacact 3350

gcccgacgac tccactcacc agctgctgca gccccatcac gactgctgcc 3400

aacgccagga gcagcctgct gctgtgggcc agtcaggggt gaggagagcc 3450

cccgacagtc ctgtcctgga agcagtgtgg gaccctccat ttcactcagg 3500

gcccccatgc tgcttgggcc ttgtgccagt tgaagaggtg gacagtcctg 3550

actcctgcca agtgagtgga ggagactggt gtccccagca ccccgtaggg 3600

gcctacgtag gacaggaacc tggaatgcag ctctccccgg ggccactggt 3650

gcgtgtgtct tttgaaacac cacctctcac aatttaggca gaagctgata 3700

tcccagaaag actatatatt gttttttttt taaaaaaaaa agaagaaaaa 3750

agagacagag aaaattggta tttattttc tattatagcc atatttatat 3800

atttatgcac ttgtaaataa atgtatatgt tttataattc tggagagaca 3850

taaggagtcc tacccgttga ggttggagag ggaaaataaa gaagctgcca 3900

cctaacagga gtcacccagg aaagcaccgc acaggctggc gcgggacaga 3950

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acagaccaag atgtgtacag cactatgagc attaaaaaac cttccagaat 4200

caataatccg tggcaacata tctctgtaaa aacaaacact gtaacttcta 4250

aataaatgtt tagtcttccc tgtaaaa 4277
```

<210> 158
<211> 1115
<212> PRT
<213> Homosapiens

<400> 158
Met Leu Arg Gly Thr Met Thr Ala Trp Arg Gly Met Arg Pro Glu

```
     1                      5                        10                         15

Val Thr Leu Ala Cys Leu Leu Leu Ala Thr Ala Gly Cys Phe Ala
              20                  25                      30

Asp Leu Asn Glu Val Pro Gln Val Thr Val Gln Pro Ala Ser Thr
              35                  40                      45

Val Gln Lys Pro Gly Gly Thr Val Ile Leu Gly Cys Val Val Glu
              50                  55                      60

Pro Pro Arg Met Asn Val Thr Trp Arg Leu Asn Gly Lys Glu Leu
              65                  70                      75

Asn Gly Ser Asp Asp Ala Leu Gly Val Leu Ile Thr His Gly Thr
              80                  85                      90

Leu Val Ile Thr Ala Leu Asn Asn His Thr Val Gly Arg Tyr Gln
              95                 100                     105

Cys Val Ala Arg Met Pro Ala Gly Ala Val Ala Ser Val Pro Ala
             110                 115                     120

Thr Val Thr Leu Ala Asn Leu Gln Asp Phe Lys Leu Asp Val Gln
             125                 130                     135

His Val Ile Glu Val Asp Glu Gly Asn Thr Ala Val Ile Ala Cys
             140                 145                     150

His Leu Pro Glu Ser His Pro Lys Ala Gln Val Arg Tyr Ser Val
             155                 160                     165

Lys Gln Glu Trp Leu Glu Ala Ser Arg Gly Asn Tyr Leu Ile Met
             170                 175                     180

Pro Ser Gly Asn Leu Gln Ile Val Asn Ala Ser Gln Glu Asp Glu
             185                 190                     195

Gly Met Tyr Lys Cys Ala Ala Tyr Asn Pro Val Thr Gln Glu Val
             200                 205                     210

Lys Thr Ser Gly Ser Ser Asp Arg Leu Arg Val Arg Arg Ser Thr
             215                 220                     225

Ala Glu Ala Ala Arg Ile Ile Tyr Pro Pro Glu Ala Gln Thr Ile
             230                 235                     240

Ile Val Thr Lys Gly Gln Ser Leu Ile Leu Glu Cys Val Ala Ser
             245                 250                     255

Gly Ile Pro Pro Pro Arg Val Thr Trp Ala Lys Asp Gly Ser Ser
             260                 265                     270

Val Thr Gly Tyr Asn Lys Thr Arg Phe Leu Leu Ser Asn Leu Leu
             275                 280                     285

Ile Asp Thr Thr Ser Glu Glu Asp Ser Gly Thr Tyr Arg Cys Met
             290                 295                     300

Ala Asp Asn Gly Val Gly Gln Pro Gly Ala Ala Val Ile Leu Tyr
             305                 310                     315

Asn Val Gln Val Phe Glu Pro Pro Glu Val Thr Met Glu Leu Ser
```

201

```
                320                     325                     330
Gln Leu Val Ile Pro Trp Gly Gln Ser Ala Lys Leu Thr Cys Glu
                335                     340                     345

Val Arg Gly Asn Pro Pro Ser Val Leu Trp Leu Arg Asn Ala
                350                     355                     360

Val Pro Leu Ile Ser Ser Gln Arg Leu Arg Leu Ser Arg Arg Ala
                365                     370                     375

Leu Arg Val Leu Ser Met Gly Pro Glu Asp Glu Gly Val Tyr Gln
                380                     385                     390

Cys Met Ala Glu Asn Glu Val Gly Ser Ala His Ala Val Val Gln
                395                     400                     405

Leu Arg Thr Ser Arg Pro Ser Ile Thr Pro Arg Leu Trp Gln Asp
                410                     415                     420

Ala Glu Leu Ala Thr Gly Thr Pro Pro Val Ser Pro Ser Lys Leu
                425                     430                     435

Gly Asn Pro Glu Gln Met Leu Arg Gly Gln Pro Ala Leu Pro Arg
                440                     445                     450

Pro Pro Thr Ser Val Gly Pro Ala Ser Pro Lys Cys Pro Gly Glu
                455                     460                     465

Lys Gly Gln Gly Ala Pro Ala Glu Ala Pro Ile Ile Leu Ser Ser
                470                     475                     480

Pro Arg Thr Ser Lys Thr Asp Ser Tyr Glu Leu Val Trp Arg Pro
                485                     490                     495

Arg His Glu Gly Ser Gly Arg Ala Pro Ile Leu Tyr Tyr Val Val
                500                     505                     510

Lys His Arg Lys Gln Val Thr Asn Ser Ser Asp Asp Trp Thr Ile
                515                     520                     525

Ser Gly Ile Pro Ala Asn Gln His Arg Leu Thr Leu Thr Arg Leu
                530                     535                     540

Asp Pro Gly Ser Leu Tyr Glu Val Glu Met Ala Ala Tyr Asn Cys
                545                     550                     555

Ala Gly Glu Gly Gln Thr Ala Met Val Thr Phe Arg Thr Gly Arg
                560                     565                     570

Arg Pro Lys Pro Glu Ile Met Ala Ser Lys Glu Gln Gln Ile Gln
                575                     580                     585

Arg Asp Asp Pro Gly Ala Ser Pro Gln Ser Ser Ser Gln Pro Asp
                590                     595                     600

His Gly Arg Leu Ser Pro Pro Glu Ala Pro Asp Arg Pro Thr Ile
                605                     610                     615

Ser Thr Ala Ser Glu Thr Ser Val Tyr Val Thr Trp Ile Pro Arg
                620                     625                     630

Gly Asn Gly Gly Phe Pro Ile Gln Ser Phe Arg Val Glu Tyr Lys
```

202

```
                635                    640                    645
```

Lys Leu Lys Lys Val Gly Asp Trp Ile Leu Ala Thr Ser Ala Ile
                650                        655                660

Pro Pro Ser Arg Leu Ser Val Glu Ile Thr Gly Leu Glu Lys Gly
                665                        670                675

Thr Ser Tyr Lys Phe Arg Val Arg Ala Leu Asn Met Leu Gly Glu
                680                        685                690

Ser Glu Pro Ser Ala Pro Ser Arg Pro Tyr Val Val Ser Gly Tyr
                695                        700                705

Ser Gly Arg Val Tyr Glu Arg Pro Val Ala Gly Pro Tyr Ile Thr
                710                        715                720

Phe Thr Asp Ala Val Asn Glu Thr Thr Ile Met Leu Lys Trp Met
                725                        730                735

Tyr Ile Pro Ala Ser Asn Asn Asn Thr Pro Ile His Gly Phe Tyr
                740                        745                750

Ile Tyr Tyr Arg Pro Thr Asp Ser Asp Asn Asp Ser Asp Tyr Lys
                755                        760                765

Lys Asp Met Val Glu Gly Asp Lys Tyr Trp His Ser Ile Ser His
                770                        775                780

Leu Gln Pro Glu Thr Ser Tyr Asp Ile Lys Met Gln Cys Phe Asn
                785                        790                795

Glu Gly Gly Glu Ser Glu Phe Ser Asn Val Met Ile Cys Glu Thr
                800                        805                810

Lys Ala Arg Lys Ser Ser Gly Gln Pro Gly Arg Leu Pro Pro Pro
                815                        820                825

Thr Leu Ala Pro Pro Gln Pro Pro Leu Pro Glu Thr Ile Glu Arg
                830                        835                840

Pro Val Gly Thr Gly Ala Met Val Ala Arg Ser Ser Asp Leu Pro
                845                        850                855

Tyr Leu Ile Val Gly Val Val Leu Gly Ser Ile Val Leu Ile Ile
                860                        865                870

Val Thr Phe Ile Pro Phe Cys Leu Trp Arg Ala Trp Ser Lys Gln
                875                        880                885

Lys His Thr Thr Asp Leu Gly Phe Pro Arg Ser Ala Leu Pro Pro
                890                        895                900

Ser Cys Pro Tyr Thr Met Val Pro Leu Gly Gly Leu Pro Gly His
                905                        910                915

Gln Ala Ser Gly Gln Pro Tyr Leu Ser Gly Ile Ser Gly Arg Ala
                920                        925                930

Cys Ala Asn Gly Ile His Met Asn Arg Gly Cys Pro Ser Ala Ala
                935                        940                945

Val Gly Tyr Pro Gly Met Lys Pro Gln Gln His Cys Pro Gly Glu

Leu Gln Gln Gln Ser Asp Thr Ser Ser Leu Leu Arg Gln Thr His
                965                        970                    975

Leu Gly Asn Gly Tyr Asp Pro Gln Ser His Gln Ile Thr Arg Gly
                980                        985                    990

Pro Lys Ser Ser Pro Asp Glu Gly Ser Phe Leu Tyr Thr Leu Pro
                995                       1000                   1005

Asp Asp Ser Thr His Gln Leu Leu Gln Pro His His Asp Cys Cys
               1010                       1015                   1020

Gln Arg Gln Glu Gln Pro Ala Ala Val Gly Gln Ser Gly Val Arg
               1025                       1030                   1035

Arg Ala Pro Asp Ser Pro Val Leu Glu Ala Val Trp Asp Pro Pro
               1040                       1045                   1050

Phe His Ser Gly Pro Pro Cys Cys Leu Gly Leu Val Pro Val Glu
               1055                       1060                   1065

Glu Val Asp Ser Pro Asp Ser Cys Gln Val Ser Gly Gly Asp Trp
               1070                       1075                   1080

Cys Pro Gln His Pro Val Gly Ala Tyr Val Gly Gln Glu Pro Gly
               1085                       1090                   1095

Met Gln Leu Ser Pro Gly Pro Leu Val Arg Val Ser Phe Glu Thr
               1100                       1105                   1110

Pro Pro Leu Thr Ile
               1115

<210> 159
<211> 4104
<212> DNA
<213> Homosapiens

<400> 159
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 cacactgcct ggtggaggga aggagcccgg cgcctctcg ccgctccccg 150

 cgccgccgtc cgcacctccc caccgcccgc cgcccgccgc cgccgcccg 200

 caaagcatga gtgagcccgc tctctgcagc tgcccggggc gcgaatggca 250

 ggctgtttcc gcggagtaaa aggtggcgcc ggtcagtggt cgtttccaat 300

 gacggacatt aaccagactg tcagatcctg gggagtcgcg agccccgagt 350

 ttggagtttt ttcccccac aacgtcacag tccgaactgc agagggaaag 400

 gaaggcggca ggaaggcgaa gctcgggctc cggcacgtag ttgggaaact 450

 tgcgggtcct agaagtcgcc tccccgcctt gccggccgcc cttgcagccc 500

 cgagccgagc agcaaagtga gacattgtgc gcctgccaga tccgccggcc 550

gcggaccggg gctgcctcgg aaacacagag gggtcttctc tcgccctgca 600

tataattagc ctgcacacaa agggagcagc tgaatggagg ttgtcactct 650

ctggaaaagg atttctgacc gagcgcttcc aatggacatt ctccagtctc 700

tctggaaaga ttctcgctaa tggatttcct gctgctcggt ctctgtctat 750

actggctgct gaggaggccc tcgggggtgg tcttgtgtct gctgggggcc 800

tgctttcaga tgctgcccgc cgcccccagc gggtgcccgc agctgtgccg 850

gtgcgagggg cggctgctgt actgcgaggc gctcaacctc accgaggcgc 900

cccacaacct gtccggcctg ctgggcttgt ccctgcgcta caacagcctc 950

tcggagctgc gcgccggcca gttcacgggg ttaatgcagc tcacgtggct 1000

ctatctggat cacaatcaca tctgctccgt gcaggggggac gcctttcaga 1050

aactgcgccg agttaaggaa ctcacgctga gttccaacca gatcacccaa 1100

ctgcccaaca ccaccttccg gcccatgccc aacctgcgca gcgtggacct 1150

ctcgtacaac aagctgcagg cgctcgcgcc cgacctcttc cacgggctgc 1200

ggaagctcac cacgctgcat atgcgggcca cgccatcca gtttgtgccc 1250

gtgcgcatct tccaggactg ccgcagcctc aagtttctcg acatcggata 1300

caatcagctc aagagtctgg cgcgcaactc tttcgccggc ttgtttaagc 1350

tcaccgagct gcacctcgag cacaacgact tggtcaaggt gaacttcgcc 1400

cacttcccgc gcctcatctc cctgcactcg ctctgcctgc ggaggaacaa 1450

ggtggccatt gtggtcagct cgctggactg ggtttggaac ctggagaaaa 1500

tggacttgtc gggcaacgag atcgagtaca tggagcccca tgtgttcgag 1550

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cgcggacggc ggggaggggc agcacgacgg cacattcgag cctgccaccg 1950

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gtggtcacgg gcaccatggc cctcatcttc tccttcctca tcgtggtcct 2050

ggtgctctac gtgtcctgga agtgtttccc agccagcctc aggcagctca 2100

gacagtgctt tgtcacgcag cgcaggaagc aaaagcagaa acagaccatg 2150

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gaaccacatt gagggagccc tggtgatcat caacgagtat ggctcgtgta 2250

cctgccacca gcagcccgcg agggaatgcg aggtgtgatt gtcccagtgg 2300

ctctcaaccc atgcgctacc aaatacgcct gggcagccgg gacgggccgg 2350

cgggcaccag gctggggtct ccttgtctgt gctctgatat gctccttgac 2400

tgaaacttta aggggatctc tcccagagac ttgacatttt agctttattg 2450

tgtcttaaaa acaaaagcga attaaaacac aacaaaaaac cccaccccac 2500

aaccttcagg acagtctatc ttaaatttca tatgagaact ccttcctccc 2550

tttgaagatc tgtccatatt caggaatctg agagtgtaaa aaaggtggcc 2600

ataagacaga gagagaataa tcgtgctttg ttttatgcta ctcctcccac 2650

cctgcccatg attaaacatc atgtatgtag aagatcttaa gtccatacgc 2700

atttcatgaa gaaccattgg aaagaggaat ctgcaatctg ggagcttaag 2750

agcaaatgat gaccatagaa agctatgttc ttactttgtg tgtgtgtctg 2800

tatgtttctg cgttgtgtgt ctttgtaggc aagcaaacgt tgtctacaca 2850

aacgggaatt tagctcacat catttcatgc ccctgtgcct ctagctctgg 2900

agattggtgg ggggaggtgg ggggaaacgg caggaataag ggaaagtggt 2950

agttttaact aaggttttgt aacacttgaa atcttttctt tctcaaatta 3000

attatcttta agcttcaaga aacttgctct gacccctcta agcaaactac 3050

taagcattta aaagagaatc taattttta aggtgtagca cctttttttt 3100

tattcttccc acagagggtg ctaatctcat tatgctgtgc tatctgaaaa 3150

gaacttaagg ccacaattca cgtctcgtcc tgggcattgt gatggattga 3200

ccctccattt gcagtacctt cccagctgat taaagttcag cagtggtatt 3250

gaggttttc gaatatttat atagaaaaaa agtcttttca catgacaaat 3300

gacactctca caccagtctt agccctagta gttttttagg ttggaccaga 3350

ggaagcaggt taaatgagac ctgtcctctg ctgcactcag aaaaaatagg 3400

cagtccctga tgctcagatc ttagccttga tattaatagt tgagaccacc 3450

tacccacaat gcagcctata ctcccaagac tacaaagtta ccatcgcaaa 3500

ggaaaggtta ttccagtaaa aggaaatagt tttctcaacc atttaaaaat 3550

attcttctga actcatcaaa gtagaagagc ccccaacctt ttctctctgc 3600

cttcaagaag gcagacattt ggtatgattt agcatcaaca acacatttat 3650

gagtatatgt aagtaatcag aggggcaaat gccacttgtt attcctccca 3700

agttttccaa gcaagtacac acagatctct ggtaggatta ggggccactt 3750
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206

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gtgtttccgg cttattttag tcgacttgtc agcaagtttg atgcctagtc 3800

tatctgacat ggcccagtag aacagggcat tgatggatca catgagatgg 3850

tagaaggaac atcatcacat accccctctca cagagaaaat tatcaaagaa 3900

ccagaaatta tatctgtttt ggagcaagag tgtcataatg tttcagggta 3950

gtcaaaataa acataaatta tctcctctag atgagtggcg atgttggctg 4000

atttgggtct gccattgaca gaatgtcaaa taaaaaggaa ttagctagaa 4050

tatgaccatt aaatgtgctt ctgaaatata ttttgagata ggtttagaat 4100

gtca 4104
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<210> 160
<211> 522
<212> PRT
<213> Homosapiens

<400> 160

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Met Asp Phe Leu Leu Leu Gly Leu Cys Leu Tyr Trp Leu Leu Arg
  1               5                  10                  15

Arg Pro Ser Gly Val Val Leu Cys Leu Leu Gly Ala Cys Phe Gln
                 20                  25                  30

Met Leu Pro Ala Ala Pro Ser Gly Cys Pro Gln Leu Cys Arg Cys
                 35                  40                  45

Glu Gly Arg Leu Leu Tyr Cys Glu Ala Leu Asn Leu Thr Glu Ala
                 50                  55                  60

Pro His Asn Leu Ser Gly Leu Leu Gly Leu Ser Leu Arg Tyr Asn
                 65                  70                  75

Ser Leu Ser Glu Leu Arg Ala Gly Gln Phe Thr Gly Leu Met Gln
                 80                  85                  90

Leu Thr Trp Leu Tyr Leu Asp His Asn His Ile Cys Ser Val Gln
                 95                  100                 105

Gly Asp Ala Phe Gln Lys Leu Arg Arg Val Lys Glu Leu Thr Leu
                 110                 115                 120

Ser Ser Asn Gln Ile Thr Gln Leu Pro Asn Thr Thr Phe Arg Pro
                 125                 130                 135

Met Pro Asn Leu Arg Ser Val Asp Leu Ser Tyr Asn Lys Leu Gln
                 140                 145                 150

Ala Leu Ala Pro Asp Leu Phe His Gly Leu Arg Lys Leu Thr Thr
                 155                 160                 165

Leu His Met Arg Ala Asn Ala Ile Gln Phe Val Pro Val Arg Ile
                 170                 175                 180

Phe Gln Asp Cys Arg Ser Leu Lys Phe Leu Asp Ile Gly Tyr Asn
                 185                 190                 195

Gln Leu Lys Ser Leu Ala Arg Asn Ser Phe Ala Gly Leu Phe Lys
                 200                 205                 210
```

```
Leu Thr Glu Leu His Leu Glu His Asn Asp Leu Val Lys Val Asn
            215             220             225

Phe Ala His Phe Pro Arg Leu Ile Ser Leu His Ser Leu Cys Leu
            230             235             240

Arg Arg Asn Lys Val Ala Ile Val Val Ser Ser Leu Asp Trp Val
            245             250             255

Trp Asn Leu Glu Lys Met Asp Leu Ser Gly Asn Glu Ile Glu Tyr
            260             265             270

Met Glu Pro His Val Phe Glu Thr Val Pro His Leu Gln Ser Leu
            275             280             285

Gln Leu Asp Ser Asn Arg Leu Thr Tyr Ile Glu Pro Arg Ile Leu
            290             295             300

Asn Ser Trp Lys Ser Leu Thr Ser Ile Thr Leu Ala Gly Asn Leu
            305             310             315

Trp Asp Cys Gly Arg Asn Val Cys Ala Leu Ala Ser Trp Leu Ser
            320             325             330

Asn Phe Gln Gly Arg Tyr Asp Gly Asn Leu Gln Cys Ala Ser Pro
            335             340             345

Glu Tyr Ala Gln Gly Glu Asp Val Leu Asp Ala Val Tyr Ala Phe
            350             355             360

His Leu Cys Glu Asp Gly Ala Glu Pro Thr Ser Gly His Leu Leu
            365             370             375

Ser Ala Val Thr Asn Arg Ser Asp Leu Gly Pro Pro Ala Ser Ser
            380             385             390

Ala Thr Thr Leu Ala Asp Gly Gly Glu Gly Gln His Asp Gly Thr
            395             400             405

Phe Glu Pro Ala Thr Val Ala Leu Pro Gly Gly Glu His Ala Glu
            410             415             420

Asn Ala Val Gln Ile His Lys Val Val Thr Gly Thr Met Ala Leu
            425             430             435

Ile Phe Ser Phe Leu Ile Val Val Leu Val Leu Tyr Val Ser Trp
            440             445             450

Lys Cys Phe Pro Ala Ser Leu Arg Gln Leu Arg Gln Cys Phe Val
            455             460             465

Thr Gln Arg Arg Lys Gln Lys Gln Lys Gln Thr Met His Gln Met
            470             475             480

Ala Ala Met Ser Ala Gln Glu Tyr Tyr Val Asp Tyr Lys Pro Asn
            485             490             495

His Ile Glu Gly Ala Leu Val Ile Ile Asn Glu Tyr Gly Ser Cys
            500             505             510

Thr Cys His Gln Gln Pro Ala Arg Glu Cys Glu Val
            515             520
```

208

<210> 161
<211> 1674
<212> DNA
<213> Homosapiens

<400> 161
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gaaggtccgt gactatggct ccccagagcc tgccttcatc taggatggct 100

cctctgggca tgctgcttgg gctgctgatg gccgcctgct tcaccttctg 150

cctcagtcat cagaacctga aggagtttgc cctgaccaac ccagagaaga 200

gcagcaccaa agaaacggag agaaaagaaa ccaaagccga ggaggagctg 250

gatgccgaag tcctggaggt gttccacccg acgcatgagt ggcaggccct 300

tcagccaggg caggctgtcc ctgcaggatc ccacgtacgg ctgaatcttc 350

agactgggga aagagaggca aaactccaat atgaggacaa gttccgaaat 400

aatttgaaag gcaaaaggct ggatatcaac accaacacct acacatctca 450

ggatctcaag agtgcactgg caaaattcaa ggaggggca gagatggaga 500

gttcaaagga agacaaggca aggcaggctg aggtaaagcg gctcttccgc 550

cccattgagg aactgaagaa agactttgat gagctgaatg ttgtcattga 600

gactgacatg cagatcatgg tacggctgat caacaagttc aatagttcca 650

gctccagttt ggaagagaag attgctgcgc tctttgatct tgaatattat 700

gtccatcaga tggacaatgc gcaggacctg ctttcctttg gtggtcttca 750

agtggtgatc aatgggctga acagcacaga gcccctcgtg aaggagtatg 800

ctgcgtttgt gctgggcgct gccttttcca gcaaccccaa ggtccaggtg 850

gaggccatcg aagggggagc cctgcagaag ctgctggtca tcctggccac 900

ggagcagccg ctcactgcaa agaagaaggt cctgtttgca ctgtgctccc 950

tgctgcgcca cttcccctat gcccagcggc agttcctgaa gctcgggggg 1000

ctgcaggtcc tgaggaccct ggtgcaggag aagggcacgg aggtgctcgc 1050

cgtgcgcgtg gtcacactgc tctacgacct ggtcacggag aagatgttcg 1100

ccgaggagga ggctgagctg acccaggaga tgtccccaga gaagctgcag 1150

cagtatcgcc aggtacacct cctgccaggc ctgtgggaac agggctggtg 1200

cgagatcacg gcccacctcc tggcgctgcc cgagcatgat gcccgtgaga 1250

aggtgctgca gacactgggc gtcctcctga ccacctgccg ggaccgctac 1300

cgtcaggacc cccagctcgg caggacactg gccagcctgc aggctgagta 1350

ccaggtgctg gccagcctgg agctgcagga tggtgaggac gagggctact 1400

tccaggagct gctgggctct gtcaacagct tgctgaagga gctgagatga 1450
```

```
ggccccacac caggactgga ctgggatgcc gctagtgagg ctgaggggtg 1500

ccagcgtggg tgggcttctc aggcaggagg acatcttggc agtgctggct 1550

tggccattaa atggaaacct gaaggccaaa aaaaaaaaaa aaaaaaaaaa 1600

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaaaa aaaaaaaaaa aaaa 1674
```

<210> 162
<211> 461
<212> PRT
<213> Homosapiens

<400> 162

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Met Ala Pro Gln Ser Leu Pro Ser Ser Arg Met Ala Pro Leu Gly
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Met Leu Leu Gly Leu Leu Met Ala Ala Cys Phe Thr Phe Cys Leu
                20                  25                  30

Ser His Gln Asn Leu Lys Glu Phe Ala Leu Thr Asn Pro Glu Lys
                35                  40                  45

Ser Ser Thr Lys Glu Thr Glu Arg Lys Glu Thr Lys Ala Glu Glu
                50                  55                  60

Glu Leu Asp Ala Glu Val Leu Glu Val Phe His Pro Thr His Glu
                65                  70                  75

Trp Gln Ala Leu Gln Pro Gly Gln Ala Val Pro Ala Gly Ser His
                80                  85                  90

Val Arg Leu Asn Leu Gln Thr Gly Glu Arg Glu Ala Lys Leu Gln
                95                  100                 105

Tyr Glu Asp Lys Phe Arg Asn Asn Leu Lys Gly Lys Arg Leu Asp
                110                 115                 120

Ile Asn Thr Asn Thr Tyr Thr Ser Gln Asp Leu Lys Ser Ala Leu
                125                 130                 135

Ala Lys Phe Lys Glu Gly Ala Glu Met Glu Ser Ser Lys Glu Asp
                140                 145                 150

Lys Ala Arg Gln Ala Glu Val Lys Arg Leu Phe Arg Pro Ile Glu
                155                 160                 165

Glu Leu Lys Lys Asp Phe Asp Glu Leu Asn Val Val Ile Glu Thr
                170                 175                 180

Asp Met Gln Ile Met Val Arg Leu Ile Asn Lys Phe Asn Ser Ser
                185                 190                 195

Ser Ser Ser Leu Glu Glu Lys Ile Ala Ala Leu Phe Asp Leu Glu
                200                 205                 210

Tyr Tyr Val His Gln Met Asp Asn Ala Gln Asp Leu Leu Ser Phe
                215                 220                 225

Gly Gly Leu Gln Val Val Ile Asn Gly Leu Asn Ser Thr Glu Pro
                230                 235                 240
```

```
Leu Val Lys Glu Tyr Ala Ala Phe Val Leu Gly Ala Ala Phe Ser
            245                 250                 255

Ser Asn Pro Lys Val Gln Val Glu Ala Ile Glu Gly Gly Ala Leu
            260                 265                 270

Gln Lys Leu Leu Val Ile Leu Ala Thr Glu Gln Pro Leu Thr Ala
            275                 280                 285

Lys Lys Lys Val Leu Phe Ala Leu Cys Ser Leu Leu Arg His Phe
            290                 295                 300

Pro Tyr Ala Gln Arg Gln Phe Leu Lys Leu Gly Gly Leu Gln Val
            305                 310                 315

Leu Arg Thr Leu Val Gln Glu Lys Gly Thr Glu Val Leu Ala Val
            320                 325                 330

Arg Val Val Thr Leu Leu Tyr Asp Leu Val Thr Glu Lys Met Phe
            335                 340                 345

Ala Glu Glu Glu Ala Glu Leu Thr Gln Glu Met Ser Pro Glu Lys
            350                 355                 360

Leu Gln Gln Tyr Arg Gln Val His Leu Leu Pro Gly Leu Trp Glu
            365                 370                 375

Gln Gly Trp Cys Glu Ile Thr Ala His Leu Leu Ala Leu Pro Glu
            380                 385                 390

His Asp Ala Arg Glu Lys Val Leu Gln Thr Leu Gly Val Leu Leu
            395                 400                 405

Thr Thr Cys Arg Asp Arg Tyr Arg Gln Asp Pro Gln Leu Gly Arg
            410                 415                 420

Thr Leu Ala Ser Leu Gln Ala Glu Tyr Gln Val Leu Ala Ser Leu
            425                 430                 435

Glu Leu Gln Asp Gly Glu Asp Glu Gly Tyr Phe Gln Glu Leu Leu
            440                 445                 450

Gly Ser Val Asn Ser Leu Leu Lys Glu Leu Arg
            455                 460
```

```
 cagagaggag gctttgggaa ttgtccagca gaaacagaga agtctgaggt 50

 ggtgtcaaga caaaagatgc ttcagctttg gaaacttgtt ctcctgtgcg 100

 gcgtgctcac tgggacctca gagtctcttc ttgacaatct tggcaatgac 150

 ctaagcaatg tcgtggataa gctggaacct gttcttcacg agggacttga 200

 gacagttgac aatactctta aaggcatcct tgagaaactg aaggtcgacc 250

 taggagtgct tcagaaatcc agtgcttggc aactggccaa gcagaaggcc 300
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caggaagctg agaaattgct gaacaatgtc atttctaagc tgcttccaac 350

taacacggac atttttgggt tgaaaatcag caactccctc atcctggatg 400

tcaaagctga accgatcgat gatggcaaag gccttaacct gagcttccct 450

gtcaccgcga atgtcactgt ggccgggccc atcattggcc agattatcaa 500

cctgaaagcc tccttggacc tcctgaccgc agtcacaatt gaaactgatc 550

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accagcatct cactttcctt gctggacaaa cacagccaaa tcatcaacaa 650

gttcgtgaat agcgtgatca cacgctgaa aagcactgta tcctccctgc 700

tgcagaagga gatatgtcca ctgatccgca tcttcatcca ctccctggat 750

gtgaatgtca ttcagcaggt cgtcgataat cctcagcaca aacccagct 800

gcaaaccctc atctgaagag gacgaatgag gaggaccact gtggtgcatg 850

ctgattggtt cccagtggct tgccccaccc ccttatagca tctccctcca 900

ggaagctgct gccaccacct aaccagcgtg aaagcctgag tcccaccaga 950

aggaccttcc cagatacccc ttctcctcac agtcagaaca gcagcctcta 1000

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<210> 164
<211> 249
<212> PRT
<213> Homosapiens

<400> 164
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Met Leu Gln Leu Trp Lys Leu Val Leu Leu Cys Gly Val Leu Thr
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Gly Thr Ser Glu Ser Leu Leu Asp Asn Leu Gly Asn Asp Leu Ser
                20                  25                      30

Asn Val Val Asp Lys Leu Glu Pro Val Leu His Glu Gly Leu Glu
                35                  40                      45

Thr Val Asp Asn Thr Leu Lys Gly Ile Leu Glu Lys Leu Lys Val
                50                  55                      60

Asp Leu Gly Val Leu Gln Lys Ser Ser Ala Trp Gln Leu Ala Lys
                65                  70                      75

Gln Lys Ala Gln Glu Ala Glu Lys Leu Leu Asn Asn Val Ile Ser
                80                  85                      90

Lys Leu Leu Pro Thr Asn Thr Asp Ile Phe Gly Leu Lys Ile Ser
                95                  100                     105

Asn Ser Leu Ile Leu Asp Val Lys Ala Glu Pro Ile Asp Asp Gly
                110                 115                     120

Lys Gly Leu Asn Leu Ser Phe Pro Val Thr Ala Asn Val Thr Val
                125                 130                     135
```

```
Ala Gly Pro Ile Ile Gly Gln Ile Ile Asn Leu Lys Ala Ser Leu
            140                 145                     150

Asp Leu Leu Thr Ala Val Thr Ile Glu Thr Asp Pro Gln Thr His
            155                 160                     165

Gln Pro Val Ala Val Leu Gly Glu Cys Ala Ser Asp Pro Thr Ser
            170                 175                     180

Ile Ser Leu Ser Leu Leu Asp Lys His Ser Gln Ile Ile Asn Lys
            185                 190                     195

Phe Val Asn Ser Val Ile Asn Thr Leu Lys Ser Thr Val Ser Ser
            200                 205                     210

Leu Leu Gln Lys Glu Ile Cys Pro Leu Ile Arg Ile Phe Ile His
            215                 220                     225

Ser Leu Asp Val Asn Val Ile Gln Gln Val Val Asp Asn Pro Gln
            230                 235                     240

His Lys Thr Gln Leu Gln Thr Leu Ile
            245
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<210> 165
<211> 1841
<212> DNA
<213> Homosapiens

<400> 165
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 ccaagtacag cagcacgagg gacatgctgg atgatgatgg ggacaccacc 200

 atgagcctgc attctcaagc ctctgccaca actcggcatc cagagccccg 250

 gcgcacagag cacagggctc cctcttcaac gtggcgacca gtggccctga 300

 ccctgctgac tttgtgcttg gtgctgctga tagggctggc agccctgggg 350

 cttttgtttt ttcagtacta ccagctctcc aatactggtc aagacaccat 400

 ttctcaaatg gaagaaagat taggaaatac gtcccaagag ttgcaatctc 450

 ttcaagtcca gaatataaag cttgcaggaa gtctgcagca tgtggctgaa 500

 aaactctgtc gtgagctgta taacaaagct ggagcacaca ggtgcagccc 550

 ttgtacagaa caatggaaat ggcatggaga caattgctac cagttctata 600

 aagacagcaa aagttgggag gactgtaaat atttctgcct tagtgaaaac 650

 tctaccatgc tgaagataaa caaacaagaa gacctggaat ttgccgcgtc 700

 tcagagctac tctgagtttt tctactctta ttggacaggg cttttgcgcc 750

 ctgacagtgg caaggcctgg ctgtggatgg atggaacccc tttcacttct 800

 gaactgttcc atattataat agatgtcacc agcccaagaa gcagagactg 850
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catgtccccc ctgaaacatt aggcgaaggt gactgattcg ccctctgcaa 1000

ctacaaatag cagagtgagc caggcggtgc caaagcaagg gctagttgag 1050

acattgggaa atggaacata atcaggaaag actatctctc tgactagtac 1100

aaaatgggtt ctcgtgtttc ctgttcagga tcaccagcat ttctgagctt 1150

gggtttatgc acgtatttaa cagtcacaag aagtcttatt tacatgccac 1200

caaccaacct cagaaaccca taatgtcatc tgccttcttg gcttagagat 1250

aactttttagc tctctttctt ctcaatgtct aatatcacct ccctgttttc 1300

atgtcttcct tacacttggt ggaataagaa acttttttgaa gtagaggaaa 1350

tacattgagg taacatcctt ttctctgaca gtcaagtagt ccatcagaaa 1400

ttggcagtca cttcccagat tgtaccagca aatacacaag gaattctttt 1450

tgtttgtttc agttcatact agtcccttcc caatccatca gtaaagaccc 1500

catctgcctt gtccatgccg tttcccaaca gggatgtcac ttgatatgag 1550

aatctcaaat ctcaatgcct tataagcatt ccttcctgtg tccattaaga 1600

ctctgataat tgtctcccct ccataggaat ttctcccagg aaagaaatat 1650

atccccatct ccgtttcata tcagaactac cgtccccgat attcccttca 1700

gagagattaa agaccagaaa aaagtgagcc tcttcatctg cacctgtaat 1750

agtttcagtt cctatttct tccattgacc catatttata cctttcaggt 1800

actgaagatt taataataat aaatgtaaat actgtgaaaa a 1841
```

```
<210> 166
<211> 280
<212> PRT
<213> Homosapiens

<400> 166
  Met Gln Ala Lys Tyr Ser Ser Thr Arg Asp Met Leu Asp Asp Asp
  1               5                   10                  15

  Gly Asp Thr Thr Met Ser Leu His Ser Gln Ala Ser Ala Thr Thr
                  20                  25                  30

  Arg His Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser
                  35                  40                  45

  Thr Trp Arg Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val
                  50                  55                  60

  Leu Leu Ile Gly Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr
                  65                  70                  75

  Tyr Gln Leu Ser Asn Thr Gly Gln Asp Thr Ile Ser Gln Met Glu
                  80                  85                  90
```

```
Glu Arg Leu Gly Asn Thr Ser Gln Glu Leu Gln Ser Leu Gln Val
                95                  100                 105

Gln Asn Ile Lys Leu Ala Gly Ser Leu Gln His Val Ala Glu Lys
               110                  115                 120

Leu Cys Arg Glu Leu Tyr Asn Lys Ala Gly Ala His Arg Cys Ser
               125                  130                 135

Pro Cys Thr Glu Gln Trp Lys Trp His Gly Asp Asn Cys Tyr Gln
               140                  145                 150

Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp Cys Lys Tyr Phe Cys
               155                  160                 165

Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn Lys Gln Glu Asp
               170                  175                 180

Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe Phe Tyr Ser
               185                  190                 195

Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala Trp Leu
               200                  205                 210

Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile Ile
               215                  220                 225

Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
               230                  235                 240

Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys
               245                  250                 255

Val Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His
               260                  265                 270

Val Pro Pro Glu Thr Leu Gly Glu Gly Asp
               275                  280
```

```
<210> 167
<211> 1238
<212> DNA
<213> Homosapiens

<400> 167
 gcgacgggca ggacgccccg ttcgcctagc gcgtgctcag gagttggtgt 50

 cctgcctgcg ctcaggatga gggggaatct ggccctggtg ggcgttctaa 100

 tcagcctggc cttcctgtca ctgctgccat ctggacatcc tcagccggct 150

 ggcgatgacg cctgctctgt gcagatcctc gtccctggcc tcaaagggga 200

 tgcgggagag aagggagaca aaggcgcccc cggacggcct ggaagagtcg 250

 gccccacggg agaaaaagga gacatggggg acaaaggaca gaaaggcagt 300

 gtgggtcgtc atggaaaaat tggtcccatt ggctctaaag gtgagaagg 350

 agattccggt gacataggac cccctggtcc taatggagaa ccaggcctcc 400

 catgtgagtg cagccagctg cgcaaggcca tcgggggagat ggacaaccag 450
```

215

```
gtctctcagc tgaccagcga gctcaagttc atcaagaatg ctgtcgccgg 500

tgtgcgcgag acggagagca agatctacct gctggtgaag gaggagaagc 550

gctacgcgga cgcccagctg tcctgccagg ccgcggggg  cacgctgagc 600

atgcccaagg acgaggctgc caatggcctg atggccgcat acctggcgca 650

agccggcctg gcccgtgtct tcatcggcat caacgacctg gagaaggagg 700

gcgccttcgt gtactctgac cactcccca  tgcggacctt caacaagtgg 750

cgcagcggtg agcccaacaa tgcctacgac gaggaggact gcgtggagat 800

ggtggcctcg ggcggctgga cgacgtggc  ctgccacacc accatgtact 850

tcatgtgtga gtttgacaag gagaacatgt gagcctcagg ctggggctgc 900

ccattggggg ccccacatgt ccctgcaggg ttggcaggga cagagcccag 950

accatggtgc cagccaggga gctgtccctc tgtgaagggt ggaggctcac 1000

tgagtagagg gctgttgtct aaactgagaa aatggcctat gcttaagagg 1050

aaaatgaaag tgttcctggg gtgctgtctc tgaagaagca gagtttcatt 1100

acctgtattg tagccccaat gtcattatgt aattattacc cagaattgct 1150

cttccataaa gcttgtgcct ttgtccaagc tatacaataa aatctttaag 1200

tagtgcagta gttaagtcca aaaaaaaaaa aaaaaaaa 1238
```

<210> 168
<211> 271
<212> PRT
<213> Homosapiens

<400> 168

```
Met Arg Gly Asn Leu Ala Leu Val Gly Val Leu Ile Ser Leu Ala
 1               5                  10                  15

Phe Leu Ser Leu Leu Pro Ser Gly His Pro Gln Pro Ala Gly Asp
                20                  25                  30

Asp Ala Cys Ser Val Gln Ile Leu Val Pro Gly Leu Lys Gly Asp
                35                  40                  45

Ala Gly Glu Lys Gly Asp Lys Gly Ala Pro Gly Arg Pro Gly Arg
                50                  55                  60

Val Gly Pro Thr Gly Glu Lys Gly Asp Met Gly Asp Lys Gly Gln
                65                  70                  75

Lys Gly Ser Val Gly Arg His Gly Lys Ile Gly Pro Ile Gly Ser
                80                  85                  90

Lys Gly Glu Lys Gly Asp Ser Gly Asp Ile Gly Pro Pro Gly Pro
                95                  100                 105

Asn Gly Glu Pro Gly Leu Pro Cys Glu Cys Ser Gln Leu Arg Lys
                110                 115                 120

Ala Ile Gly Glu Met Asp Asn Gln Val Ser Gln Leu Thr Ser Glu
```

216

```
                 125                    130                    135
Leu Lys Phe Ile Lys Asn Ala Val Ala Gly Val Arg Glu Thr Glu
                140                145             150
Ser Lys Ile Tyr Leu Leu Val Lys Glu Glu Lys Arg Tyr Ala Asp
                155                160             165
Ala Gln Leu Ser Cys Gln Gly Arg Gly Thr Leu Ser Met Pro
                170                175             180
Lys Asp Glu Ala Ala Asn Gly Leu Met Ala Ala Tyr Leu Ala Gln
                185                190             195
Ala Gly Leu Ala Arg Val Phe Ile Gly Ile Asn Asp Leu Glu Lys
                200                205             210
Glu Gly Ala Phe Val Tyr Ser Asp His Ser Pro Met Arg Thr Phe
                215                220             225
Asn Lys Trp Arg Ser Gly Glu Pro Asn Asn Ala Tyr Asp Glu Glu
                230                235             240
Asp Cys Val Glu Met Val Ala Ser Gly Gly Trp Asn Asp Val Ala
                245                250             255
Cys His Thr Thr Met Tyr Phe Met Cys Glu Phe Asp Lys Glu Asn
                260                265             270

Met
```

<210> 169
<211> 972
<212> DNA
<213> Homosapiens

<400> 169
```
agtgactgca gccttcctag atcccctcca ctcggtttct ctctttgcag 50

gagcaccggc agcaccagtg tgtgagggga gcaggcagcg gtcctagcca 100

gttccttgat cctgccagac cacccagccc ccggcacaga gctgctccac 150

aggcaccatg aggatcatgc tgctattcac agccatcctg gccttcagcc 200

tagctcagag ctttggggct gtctgtaagg agccacagga ggaggtggtt 250

cctggcgggg gccgcagcaa gagggatcca gatctctacc agctgctcca 300

gagactcttc aaaagccact catctctgga gggattgctc aaagccctga 350

gccaggctag cacagatcct aaggaatcaa catctcccga gaaacgtgac 400

atgcatgact ctttgtgggg acttatgggc aagaggagcg tccagccaga 450

gggaaagaca ggacctttct taccttcagt gagggttcct cggccccttc 500

atcccaatca gcttggatcc acaggaaagt cttccctggg aacagaggag 550

cagagacctt ataagactc tcctacggat gtgaatcaag agaacgtccc 600

cagctttggc atcctcaagt atcccccgag agcagaatag gtactccact 650
```

```
tccggactcc tggactgcat taggaagacc tctttccctg tcccaatccc 700

caggtgcgca cgctcctgtt accctttctc ttccctgttc ttgtaacatt 750

cttgtgcttt gactccttct ccatctttc tacctgaccc tggtgtggaa 800

actgcatagt gaatatcccc aaccccaatg ggcattgact gtagaatacc 850

ctagagttcc tgtagtgtcc tacattaaaa atataatgtc tctctctatt 900

cctcaacaat aaaggatttt tgcatatgaa aaaaaaaaa aaaaaaaaaa 950

aaaaaaaaaa aaaaaaaaaa aa 972
```

<210> 170
<211> 135
<212> PRT
<213> Homosapiens

<400> 170

```
Met Arg Ile Met Leu Leu Phe Thr Ala Ile Leu Ala Phe Ser Leu
  1               5                  10                  15

Ala Gln Ser Phe Gly Ala Val Cys Lys Glu Pro Gln Glu Glu Val
                20              25                  30

Val Pro Gly Gly Gly Arg Ser Lys Arg Asp Pro Asp Leu Tyr Gln
                35              40                  45

Leu Leu Gln Arg Leu Phe Lys Ser His Ser Ser Leu Glu Gly Leu
                50              55                  60

Leu Lys Ala Leu Ser Gln Ala Ser Thr Asp Pro Lys Glu Ser Thr
                65              70                  75

Ser Pro Glu Lys Arg Asp Met His Asp Phe Phe Val Gly Leu Met
                80              85                  90

Gly Lys Arg Ser Val Gln Pro Glu Gly Lys Thr Gly Pro Phe Leu
                95              100                 105

Pro Ser Val Arg Val Pro Arg Pro Leu His Pro Asn Gln Leu Gly
                110             115                 120

Ser Thr Gly Lys Ser Ser Leu Gly Thr Glu Glu Gln Arg Pro Leu
                125             130                 135
```

<210> 171
<211> 1415
<212> DNA
<213> Homosapiens

<400> 171

```
tggcctcccc agcttgccag gcacaaggct gagcgggagg aagcgagagg 50

catctaagca ggcagtgttt tgccttcacc ccaagtgacc atgagaggtg 100

ccacgcgagt ctcaatcatg ctcctcctag taactgtgtc tgactgtgct 150

gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200

ctgtgccatc agcctgtggc ttcgagggct gcggatgtgc accccgctgg 250
```

218

```
ggcgggaagg cgaggagtgc caccccggca gccacaaggt ccccttcttc 300

aggaaacgca agcaccacac ctgtccttgc ttgcccaacc tgctgtgctc 350

caggttcccg gacggcaggt accgctgctc catggacttg aagaacatca 400

attttaggc gcttgcctgg tctcaggata cccaccatcc ttttcctgag 450

cacagcctgg atttttattt ctgccatgaa acccagctcc catgactctc 500

ccagtcccta cactgactac cctgatctct cttgtctagt acgcacatat 550

gcacacaggc agacatacct cccatcatga catggtcccc aggctggcct 600

gaggatgtca cagcttgagg ctgtggtgtg aaaggtggcc agcctggttc 650

tcttccctgc tcaggctgcc agagaggtgg taaatggcag aaaggacatt 700

ccccctcccc tccccaggtg acctgctctc tttcctgggc cctgcccctc 750

tccccacatg tatccctcgg tctgaattag acattcctgg gcacaggctc 800

ttgggtgcat tgctcagagt cccaggtcct ggcctgaccc tcaggccctt 850

cacgtgaggt ctgtgaggac caatttgtgg gtagttcatc ttccctcgat 900

tggttaactc cttagtttca gaccacagac tcaagattgg ctcttcccag 950

agggcagcag acagtcaccc caaggcaggt gtagggagcc cagggaggcc 1000

aatcagcccc ctgaagactc tggtcccagt cagcctgtgg cttgtggcct 1050

gtgacctgtg accttctgcc agaattgtca tgcctctgag gcccctctt 1100

accacacttt accagttaac cactgaagcc cccaattccc acagcttttc 1150

cattaaaatg caaatggtgg tggttcaatc taatctgata ttgacatatt 1200

agaaggcaat tagggtgttt ccttaaacaa ctcctttcca aggatcagcc 1250

ctgagagcag gttggtgact ttgaggaggg cagtcctctg tccagattgg 1300

ggtgggagca agggacaggg agcagggcag gggctgaaag gggcactgat 1350

tcagaccagg gaggcaacta cacaccaaca tgctggcttt agaataaaag 1400

caccaactga aaaaa 1415
```

<210> 172
<211> 105
<212> PRT
<213> Homosapiens

<400> 172

```
Met Arg Gly Ala Thr Arg Val Ser Ile Met Leu Leu Leu Val Thr
  1               5                  10                  15

Val Ser Asp Cys Ala Val Ile Thr Gly Ala Cys Glu Arg Asp Val
                 20                  25                  30

Gln Cys Gly Ala Gly Thr Cys Cys Ala Ile Ser Leu Trp Leu Arg
                 35                  40                  45
```

```
Gly Leu Arg Met Cys Thr Pro Leu Gly Arg Glu Gly Glu Glu Cys
            50                      55                      60

His Pro Gly Ser His Lys Val Pro Phe Phe Arg Lys Arg Lys His
            65                      70                      75

His Thr Cys Pro Cys Leu Pro Asn Leu Leu Cys Ser Arg Phe Pro
            80                      85                      90

Asp Gly Arg Tyr Arg Cys Ser Met Asp Leu Lys Asn Ile Asn Phe
            95                     100                     105
```

<210> 173
<211> 1281
<212> DNA
<213> Homosapiens

<400> 173

```
agcgcccggg cgtcggggcg gtaaaaggcc ggcagaaggg aggcacttga   50

gaaatgtctt tcctccagga cccaagtttc ttcaccatgg ggatgtggtc  100

cattggtgca ggagccctgg gggctgctgc cttggcattg ctgcttgcca  150

acacagacgt gtttctgtcc aagccccaga aagcggccct ggagtacctg  200

gaggatatag acctgaaaac actggagaag gaaccaagga ctttcaaagc  250

aaaggagcta tgggaaaaaa atggagctgt gattatggcc gtgcggaggc  300

caggctgttt cctctgtcga gaggaagctg cggatctgtc ctccctgaaa  350

agcatgttgg accagctggg cgtccccctc tatgcagtgg taaaggagca  400

catcaggact gaagtgaagg atttccagcc ttatttcaaa ggagaaatct  450

tcctggatga aaagaaaaag ttctatggtc cacaaaggcg gaagatgatg  500

tttatgggat ttatccgtct gggagtgtgg tacaacttct ccgagcctg   550

gaacggaggc ttctctggaa acctggaagg agaaggcttc atccttgggg  600

gagttttcgt ggtgggatca ggaaagcagg gcattcttct tgagcaccga  650

gaaaaagaat ttggagacaa agtaaaccta ctttctgttc tggaagctgc  700

taagatgatc aaaccacaga ctttggcctc agagaaaaaa tgattgtgtg  750

aaactgccca gctcagggat aaccagggac attcacctgt gttcatggga  800

tgtattgttt ccactcgtgt ccctaaggag tgagaaaccc atttatactc  850

tactctcagt atggattatt aatgtatttt aatattctgt ttaggcccac  900

taaggcaaaa tagccccaaa acaagactga caaaaatctg aaaaactaat  950

gaggattatt aagctaaaac ctgggaaata ggaggcttaa aattgactgc 1000

caggctgggt gcagtggctc acacctgtaa tcccagcact ttgggaggcc 1050

aaggtgagca agtcacttga ggtcgggagt tcgagaccag cctgagcaac 1100

atggcgaaac cccgtctcta ctaaaaatac aaaaatcacc cgggtgtggt 1150
```

220

```
ggcaggcacc tgtagtccca gctacccggg aggctgaggc aggagaatca 1200

cttgaacctg ggaggtggag gttgcggtga gctgagatca caccactgta 1250

ttccagcctg ggtgactgag actctaacta a 1281
```

<210> 174
<211> 229
<212> PRT
<213> Homosapiens

<400> 174

| Met | Ser | Phe | Leu | Gln | Asp | Pro | Ser | Phe | Phe | Thr | Met | Gly | Met | Trp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| Ser | Ile | Gly | Ala | Gly | Ala | Leu | Gly | Ala | Ala | Ala | Leu | Ala | Leu | Leu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 20 | | | | | 25 | | | | | 30 |

| Leu | Ala | Asn | Thr | Asp | Val | Phe | Leu | Ser | Lys | Pro | Gln | Lys | Ala | Ala |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 35 | | | | | 40 | | | | | 45 |

| Leu | Glu | Tyr | Leu | Glu | Asp | Ile | Asp | Leu | Lys | Thr | Leu | Glu | Lys | Glu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 50 | | | | | 55 | | | | | 60 |

| Pro | Arg | Thr | Phe | Lys | Ala | Lys | Glu | Leu | Trp | Glu | Lys | Asn | Gly | Ala |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 65 | | | | | 70 | | | | | 75 |

| Val | Ile | Met | Ala | Val | Arg | Arg | Pro | Gly | Cys | Phe | Leu | Cys | Arg | Glu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 80 | | | | | 85 | | | | | 90 |

| Glu | Ala | Ala | Asp | Leu | Ser | Ser | Leu | Lys | Ser | Met | Leu | Asp | Gln | Leu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 95 | | | | | 100 | | | | | 105 |

| Gly | Val | Pro | Leu | Tyr | Ala | Val | Val | Lys | Glu | His | Ile | Arg | Thr | Glu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 110 | | | | | 115 | | | | | 120 |

| Val | Lys | Asp | Phe | Gln | Pro | Tyr | Phe | Lys | Gly | Glu | Ile | Phe | Leu | Asp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 125 | | | | | 130 | | | | | 135 |

| Glu | Lys | Lys | Lys | Phe | Tyr | Gly | Pro | Gln | Arg | Arg | Lys | Met | Met | Phe |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 140 | | | | | 145 | | | | | 150 |

| Met | Gly | Phe | Ile | Arg | Leu | Gly | Val | Trp | Tyr | Asn | Phe | Phe | Arg | Ala |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 155 | | | | | 160 | | | | | 165 |

| Trp | Asn | Gly | Gly | Phe | Ser | Gly | Asn | Leu | Glu | Gly | Glu | Gly | Phe | Ile |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 170 | | | | | 175 | | | | | 180 |

| Leu | Gly | Gly | Val | Phe | Val | Val | Gly | Ser | Gly | Lys | Gln | Gly | Ile | Leu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 185 | | | | | 190 | | | | | 195 |

| Leu | Glu | His | Arg | Glu | Lys | Glu | Phe | Gly | Asp | Lys | Val | Asn | Leu | Leu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 200 | | | | | 205 | | | | | 210 |

| Ser | Val | Leu | Glu | Ala | Ala | Lys | Met | Ile | Lys | Pro | Gln | Thr | Leu | Ala |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 215 | | | | | 220 | | | | | 225 |

| Ser | Glu | Lys | Lys |
|---|---|---|---|

<210> 175
<211> 1844
<212> DNA

<213> Homosapiens

<400> 175

```
gacagtggag ggcagtggag aggaccgcgc tgtcctgctg tcaccaagag  50

ctggagacac catctcccac cgagagtcat ggccccattg ccctgcacc  100

tcctcgtcct cgtccccatc ctcctcagcc tggtggcctc ccaggactgg  150

aaggctgaac gcagccaaga ccccttcgag aaatgcatgc aggatcctga  200

ctatgagcag ctgctcaagg tggtgacctg ggggctcaat cggaccctga  250

agccccagag ggtgattgtg gttggcgctg gtgtggccgg gctggtggcc  300

gccaaggtgc tcagcgatgc tggacacaag gtcaccatcc tggaggcaga  350

taacaggatc gggggccgca tcttcaccta ccgggaccag aacacgggct  400

ggattgggga gctgggagcc atgcgcatgc ccagctctca caggatcctc  450

cacaagctct gccagggcct ggggctcaac ctgaccaagt tcacccagta  500

cgacaagaac acgtggacgg aggtgcacga agtgaagctg cgcaactatg  550

tggtggagaa ggtgcccgag aagctgggct acgccttgcg tccccaggaa  600

aagggccact cgcccgaaga catctaccag atggctctca accaggccct  650

caaagacctc aaggcactgg gctgcagaaa ggcgatgaag aagtttgaaa  700

ggcacacgct cttggaatat cttctcgggg aggggaacct gagccggccg  750

gccgtgcagc ttctgggaga cgtgatgtcc gaggatggct tcttctatct  800

cagcttcgcc gaggccctcc gggcccacag ctgcctcagc gacagactcc  850

agtacagccg catcgtgggt ggctgggacc tgctgccgcg cgcgctgctg  900

agctcgctgt ccgggcttgt gctgttgaac gcgcccgtgg tggcgatgac  950

ccagggaccg cacgatgtgc acgtgcagat cgagacctct cccccggcgc  1000

ggaatctgaa ggtgctgaag gccgacgtgg tgctgctgac ggcgagcgga  1050

ccggcggtga agcgcatcac cttctcgccg ccgctgcccc gccacatgca  1100

ggaggcgctg cggaggctgc actacgtgcc ggccaccaag gtgttcctaa  1150

gcttccgcag gcccttctgg cgcgaggagc acattgaagg cggccactca  1200

aacaccgatc gcccgtcgcg catgattttc tacccgccgc gcgcgagggg  1250

cgcgctgctg ctggcctcgt acacgtggtc ggacgcggcg gcagcgttcg  1300

ccggcttgag ccgggaagag gcgttgcgct ggcgctcga cgacgtggcg  1350

gcattgcacg ggcctgtcgt gcgccagctc tgggacggca ccggcgtcgt  1400

caagcgttgg gcggaggacc agcacagcca gggtggcttt gtggtacagc  1450

cgccggcgct ctggcaaacc gaaaaggatg actggacggt cccttatggc  1500
```

222

```
cgcatctact ttgccggcga gcacaccgcc tacccgcacg gctgggtgga 1550

gacggcggtc aagtcggcgc tgcgcgccgc catcaagatc aacagccgga 1600

aggggcctgc atcggacacg gccagccccg aggggcacgc atctgacatg 1650

gaggggcagg ggcatgtgca tggggtggcc agcagcccct cgcatgacct 1700

ggcaaaggaa gaaggcagcc accctccagt ccaaggccag ttatctctcc 1750

aaaacacgac ccacacgagg acctcgcatt aaagtatttt cggaaaaaaa 1800

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1844
```

<210> 176
<211> 567
<212> PRT
<213> Homosapiens

<400> 176

```
Met Ala Pro Leu Ala Leu His Leu Leu Val Leu Val Pro Ile Leu
  1               5                  10                  15

Leu Ser Leu Val Ala Ser Gln Asp Trp Lys Ala Glu Arg Ser Gln
                 20                  25                  30

Asp Pro Phe Glu Lys Cys Met Gln Asp Pro Asp Tyr Glu Gln Leu
                 35                  40                  45

Leu Lys Val Val Thr Trp Gly Leu Asn Arg Thr Leu Lys Pro Gln
                 50                  55                  60

Arg Val Ile Val Val Gly Ala Gly Val Ala Gly Leu Val Ala Ala
                 65                  70                  75

Lys Val Leu Ser Asp Ala Gly His Lys Val Thr Ile Leu Glu Ala
                 80                  85                  90

Asp Asn Arg Ile Gly Gly Arg Ile Phe Thr Tyr Arg Asp Gln Asn
                 95                  100                 105

Thr Gly Trp Ile Gly Glu Leu Gly Ala Met Arg Met Pro Ser Ser
                 110                 115                 120

His Arg Ile Leu His Lys Leu Cys Gln Gly Leu Gly Leu Asn Leu
                 125                 130                 135

Thr Lys Phe Thr Gln Tyr Asp Lys Asn Thr Trp Thr Glu Val His
                 140                 145                 150

Glu Val Lys Leu Arg Asn Tyr Val Val Glu Lys Val Pro Glu Lys
                 155                 160                 165

Leu Gly Tyr Ala Leu Arg Pro Gln Glu Lys Gly His Ser Pro Glu
                 170                 175                 180

Asp Ile Tyr Gln Met Ala Leu Asn Gln Ala Leu Lys Asp Leu Lys
                 185                 190                 195

Ala Leu Gly Cys Arg Lys Ala Met Lys Lys Phe Glu Arg His Thr
                 200                 205                 210

Leu Leu Glu Tyr Leu Leu Gly Glu Gly Asn Leu Ser Arg Pro Ala
```

Val Gln Leu Leu Gly Asp Val Met Ser Glu Asp Gly Phe Phe Tyr
           230            235                  240

Leu Ser Phe Ala Glu Ala Leu Arg Ala His Ser Cys Leu Ser Asp
           245            250                  255

Arg Leu Gln Tyr Ser Arg Ile Val Gly Gly Trp Asp Leu Leu Pro
           260            265                  270

Arg Ala Leu Leu Ser Ser Leu Ser Gly Leu Val Leu Leu Asn Ala
           275            280                  285

Pro Val Val Ala Met Thr Gln Gly Pro His Asp Val His Val Gln
           290            295                  300

Ile Glu Thr Ser Pro Pro Ala Arg Asn Leu Lys Val Leu Lys Ala
           305            310                  315

Asp Val Val Leu Leu Thr Ala Ser Gly Pro Ala Val Lys Arg Ile
           320            325                  330

Thr Phe Ser Pro Pro Leu Pro Arg His Met Gln Glu Ala Leu Arg
           335            340                  345

Arg Leu His Tyr Val Pro Ala Thr Lys Val Phe Leu Ser Phe Arg
           350            355                  360

Arg Pro Phe Trp Arg Glu Glu His Ile Glu Gly Gly His Ser Asn
           365            370                  375

Thr Asp Arg Pro Ser Arg Met Ile Phe Tyr Pro Pro Pro Arg Glu
           380            385                  390

Gly Ala Leu Leu Leu Ala Ser Tyr Thr Trp Ser Asp Ala Ala Ala
           395            400                  405

Ala Phe Ala Gly Leu Ser Arg Glu Glu Ala Leu Arg Leu Ala Leu
           410            415                  420

Asp Asp Val Ala Ala Leu His Gly Pro Val Val Arg Gln Leu Trp
           425            430                  435

Asp Gly Thr Gly Val Val Lys Arg Trp Ala Glu Asp Gln His Ser
           440            445                  450

Gln Gly Gly Phe Val Val Gln Pro Pro Ala Leu Trp Gln Thr Glu
           455            460                  465

Lys Asp Asp Trp Thr Val Pro Tyr Gly Arg Ile Tyr Phe Ala Gly
           470            475                  480

Glu His Thr Ala Tyr Pro His Gly Trp Val Glu Thr Ala Val Lys
           485            490                  495

Ser Ala Leu Arg Ala Ala Ile Lys Ile Asn Ser Arg Lys Gly Pro
           500            505                  510

Ala Ser Asp Thr Ala Ser Pro Glu Gly His Ala Ser Asp Met Glu
           515            520                  525

Gly Gln Gly His Val His Gly Val Ala Ser Ser Pro Ser His Asp

224

```
              530                535                540
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Leu Ala Lys Glu Glu Gly Ser His Pro Pro Val Gln Gly Gln Leu
            545                550                555

Ser Leu Gln Asn Thr Thr His Thr Arg Thr Ser His
            560                565

<210> 177
<211> 1215
<212> DNA
<213> Homosapiens

<400> 177
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gctccaccgg ggtcgctcgc cctccggctc ctgctgttcg tggcgctacc 200

cgcctccggc tggctgacga cgggcgcccc cgagccgccg ccgctgtccg 250

gagccccaca ggacggcatc agaattaatg taactacact gaaagatgat 300

ggggacatat ctaaacagca ggttgttctt aacataacct atgagagtgg 350

acaggtgtat gtaaatgact tacctgtaaa tagtggtgta acccgaataa 400

gctgtcagac tttgatagtg aagaatgaaa tcttgaaaa tttggaggaa 450

aaagaatatt ttggaattgt cagtgtaagg attttagttc atgagtggcc 500

tatgacatct ggttccagtt tgcaactaat tgtcattcaa gaagaggtag 550

tagagattga tggaaaacaa gttcagcaaa aggatgtcac tgaaattgat 600

attttagtta agaaccgggg agtactcaga cattcaaact ataccctccc 650

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actagccagt atcttatcag gaatgtggaa accactgtag atgaagatgt 800

tttacctggc aagttacctg aaactcctct cagagcagag ccgccatctt 850

catataaggt aatgtgtcag tggatggaaa agtttagaaa agatctgtgt 900

aggttctgga gcaacgtttt cccagtattc tttcagtttt tgaacatcat 950

ggtggttgga attacaggag cagctgtggt aataaccatc ttaaaggtgt 1000

ttttcccagt ttctgaatac aaaggaattc ttcagttgga taaagtggac 1050

gtcatacctg tgacagctat caacttatat ccagatggtc cagagaaaag 1100

agctgaaaac cttgaagata aaacatgtat ttaaaacgcc atctcatatc 1150

atggactccg aagtagcctg ttgcctccaa atttgccact tgaatataat 1200

tttctttaaa tcgtt 1215
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&lt;210&gt; 178
&lt;211&gt; 330
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 178

```
Met Glu Gly Ala Pro Pro Gly Ser Leu Ala Leu Arg Leu Leu Leu
 1               5                  10                  15

Phe Val Ala Leu Pro Ala Ser Gly Trp Leu Thr Thr Gly Ala Pro
                20                  25                  30

Glu Pro Pro Pro Leu Ser Gly Ala Pro Gln Asp Gly Ile Arg Ile
                35                  40                  45

Asn Val Thr Thr Leu Lys Asp Asp Gly Asp Ile Ser Lys Gln Gln
                50                  55                  60

Val Val Leu Asn Ile Thr Tyr Glu Ser Gly Gln Val Tyr Val Asn
                65                  70                  75

Asp Leu Pro Val Asn Ser Gly Val Thr Arg Ile Ser Cys Gln Thr
                80                  85                  90

Leu Ile Val Lys Asn Glu Asn Leu Glu Asn Leu Glu Glu Lys Glu
                95                  100                 105

Tyr Phe Gly Ile Val Ser Val Arg Ile Leu Val His Glu Trp Pro
                110                 115                 120

Met Thr Ser Gly Ser Ser Leu Gln Leu Ile Val Ile Gln Glu Glu
                125                 130                 135

Val Val Glu Ile Asp Gly Lys Gln Val Gln Gln Lys Asp Val Thr
                140                 145                 150

Glu Ile Asp Ile Leu Val Lys Asn Arg Gly Val Leu Arg His Ser
                155                 160                 165

Asn Tyr Thr Leu Pro Leu Glu Glu Ser Met Leu Tyr Ser Ile Ser
                170                 175                 180

Arg Asp Ser Asp Ile Leu Phe Thr Leu Pro Asn Leu Ser Lys Lys
                185                 190                 195

Glu Ser Val Ser Ser Leu Gln Thr Thr Ser Gln Tyr Leu Ile Arg
                200                 205                 210

Asn Val Glu Thr Thr Val Asp Glu Asp Val Leu Pro Gly Lys Leu
                215                 220                 225

Pro Glu Thr Pro Leu Arg Ala Glu Pro Pro Ser Ser Tyr Lys Val
                230                 235                 240

Met Cys Gln Trp Met Glu Lys Phe Arg Lys Asp Leu Cys Arg Phe
                245                 250                 255

Trp Ser Asn Val Phe Pro Val Phe Phe Gln Phe Leu Asn Ile Met
                260                 265                 270

Val Val Gly Ile Thr Gly Ala Ala Val Val Ile Thr Ile Leu Lys
                275                 280                 285
```

```
Val Phe Phe Pro Val Ser Glu Tyr Lys Gly Ile Leu Gln Leu Asp
              290                 295                 300

Lys Val Asp Val Ile Pro Val Thr Ala Ile Asn Leu Tyr Pro Asp
              305                 310                 315

Gly Pro Glu Lys Arg Ala Glu Asn Leu Glu Asp Lys Thr Cys Ile
              320                 325                 330
```

<210> 179
<211> 3877
<212> DNA
<213> Homosapiens

<400> 179

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ctcgtgtgtg ctgccttcc tatttcaagg aaagacgcca aggtaatttt 150

gacccagagg agcaatgatg tagccacctc ctaaccttcc cttcttgaac 200

ccccagttat gccaggattt actagagagt gtcaactcaa ccagcaagcg 250

gctccttcgg cttaacttgt ggttggagga gagaaccttt gtggggctgc 300

gttctcttag cagtgctcag aagtgacttg cctgagggtg gaccagaaga 350

aaggaaaggt cccctcttgc tgttggctgc acatcaggaa ggctgtgatg 400

ggaatgaagg tgaaaacttg agatttcac ttcagtcatt gcttctgcct 450

gcaagatcat cctttaaaag tagagaagct gctctgtgtg gtggttaact 500

ccaagaggca gaactcgttc tagaaggaaa tggatgcaag cagctccggg 550

ggccccaaac gcatgcttcc tgtggtctag cccagggaag cccttccgtg 600

ggggccccgg ctttgaggga tgccaccggt tctggacgca tggctgattc 650

ctgaatgatg atggttcgcc gggggctgct tgcgtggatt tcccgggtgg 700

tggtttttgct ggtgctcctc tgctgtgcta tctctgtcct gtacatgttg 750

gcctgcaccc caaaaggtga cgaggagcag ctggcactgc ccagggccaa 800

cagccccacg gggaaggagg ggtaccaggc cgtccttcag gagtgggagg 850

agcagcaccg caactacgtg agcagcctga gcggcagat cgcacagctc 900

aaggaggagc tgcaggagag gagtgagcag ctcaggaatg ggcagtacca 950

agccagcgat gctgctggcc tgggtctgga caggagcccc ccagagaaaa 1000

cccaggccga cctcctggcc ttcctgcact cgcaggtgga caaggcagag 1050

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tagctttact ctacagaagg tgtaccagct ggagactggc cttacccgcc 1150

accccgagga gaagcctgtg aggaaggaca agcgggatga gttggtggaa 1200
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227

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gccattgaat cagccttgga gaccctgaac aatcctgcag agaacagccc 1250

caatcaccgt ccttacacgg cctctgattt catagaaggg atctaccgaa 1300

cagaaaggga caaagggaca ttgtatgagc tcaccttcaa aggggaccac 1350

aaacacgaat tcaaacggct catcttattt cgaccattca gccccatcat 1400

gaaagtgaaa aatgaaaagc tcaacatggc caacacgctt atcaatgtta 1450

tcgtgcctct agcaaaaagg gtggacaagt tccggcagtt catgcagaat 1500

ttcagggaga tgtgcattga gcaggatggg agagtccatc tcactgttgt 1550

ttactttggg aaagaagaaa taaatgaagt caaaggaata cttgaaaaca 1600

cttccaaagc tgccaacttc aggaacttta ccttcatcca gctgaatgga 1650

gaattttctc ggggaaaggg acttgatgtt ggagcccgct tctggaaggg 1700

aagcaacgtc cttctctttt tctgtgatgt ggacatctac ttcacatctg 1750

aattcctcaa tacgtgtagg ctgaatacac agccagggaa gaaggtattt 1800

tatccagttc ttttcagtca gtacaatcct ggcataatat acggccacca 1850

tgatgcagtc cctcccttgg aacagcagct ggtcataaag aaggaaactg 1900

gattttggag agactttgga tttgggatga cgtgtcagta tcggtcagac 1950

ttcatcaata taggtgggtt tgatctggac atcaaaggct ggggcggaga 2000

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tgaactccca gagaaggatt gtgggagaca ctttttcttt ccttttgcaa 2300

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tataagccta atggtgtgga ggttttgatg gtgtttacaa tacactgaga 2550

cctgttgttt tgtgtgctca ttgaaatatt catgatttaa gagcagtttt 2600

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gagcctatca gcagggctct agtttctagg aatgctaaaa tatcagaagg 2700

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taaaatggac cagaaaagaa aagaaaccat aaatatcgtg tcatattttc 2800
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acaagttggc ctacattttt atattttta agaagatact ttgagatgca 3000

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agtattttcg aagaggagca actgaacact ggaggaaaag aaaatgacac 3200

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tttcaaaaca gggtgctcct cctggcttct ggcttccata agaagaaatg 3400

gagaaaaata tatatatata tatatatt gtgaaagatc aatccatctg 3450

ccagaatcta gtgggatgga agttttgct acatgttatc caccccaggc 3500

caggtggaag taactgaatt attttttaaa ttaagcagtt ctactcaatc 3550

accaagatgc ttctgaaaat tgcattttat taccatttca aactattttt 3600

taaaaataaa tacagttaac atagagtggt ttcttcattc atgtgaaaat 3650

tattagccag caccagatgc atgagctaat tatctctttg agtccttgct 3700

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gctgttggtg tgttaaaaaa tgcattgtat tgatttgtac tggtagttta 3800

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taataaaata tgatttgtgg atatgaa 3877
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<210> 180
<211> 532
<212> PRT
<213> Homosapiens

<400> 180

| Met | Met | Met | Val | Arg | Arg | Gly | Leu | Leu | Ala | Trp | Ile | Ser | Arg | Val |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

| Val | Val | Leu | Leu | Val | Leu | Leu | Cys | Cys | Ala | Ile | Ser | Val | Leu | Tyr |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |

| Met | Leu | Ala | Cys | Thr | Pro | Lys | Gly | Asp | Glu | Glu | Gln | Leu | Ala | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |

| Pro | Arg | Ala | Asn | Ser | Pro | Thr | Gly | Lys | Glu | Gly | Tyr | Gln | Ala | Val |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |

| Leu | Gln | Glu | Trp | Glu | Glu | Gln | His | Arg | Asn | Tyr | Val | Ser | Ser | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

```
                    65                        70                        75
Lys Arg Gln Ile Ala Gln Leu Lys Glu Glu Leu Gln Glu Arg Ser
                    80                        85                        90
Glu Gln Leu Arg Asn Gly Gln Tyr Gln Ala Ser Asp Ala Ala Gly
                    95                       100                       105
Leu Gly Leu Asp Arg Ser Pro Pro Glu Lys Thr Gln Ala Asp Leu
                   110                       115                       120
Leu Ala Phe Leu His Ser Gln Val Asp Lys Ala Glu Val Asn Ala
                   125                       130                       135
Gly Val Lys Leu Ala Thr Glu Tyr Ala Ala Val Pro Phe Asp Ser
                   140                       145                       150
Phe Thr Leu Gln Lys Val Tyr Gln Leu Glu Thr Gly Leu Thr Arg
                   155                       160                       165
His Pro Glu Glu Lys Pro Val Arg Lys Asp Lys Arg Asp Glu Leu
                   170                       175                       180
Val Glu Ala Ile Glu Ser Ala Leu Glu Thr Leu Asn Asn Pro Ala
                   185                       190                       195
Glu Asn Ser Pro Asn His Arg Pro Tyr Thr Ala Ser Asp Phe Ile
                   200                       205                       210
Glu Gly Ile Tyr Arg Thr Glu Arg Asp Lys Gly Thr Leu Tyr Glu
                   215                       220                       225
Leu Thr Phe Lys Gly Asp His Lys His Glu Phe Lys Arg Leu Ile
                   230                       235                       240
Leu Phe Arg Pro Phe Ser Pro Ile Met Lys Val Lys Asn Glu Lys
                   245                       250                       255
Leu Asn Met Ala Asn Thr Leu Ile Asn Val Ile Val Pro Leu Ala
                   260                       265                       270
Lys Arg Val Asp Lys Phe Arg Gln Phe Met Gln Asn Phe Arg Glu
                   275                       280                       285
Met Cys Ile Glu Gln Asp Gly Arg Val His Leu Thr Val Val Tyr
                   290                       295                       300
Phe Gly Lys Glu Glu Ile Asn Glu Val Lys Gly Ile Leu Glu Asn
                   305                       310                       315
Thr Ser Lys Ala Ala Asn Phe Arg Asn Phe Thr Phe Ile Gln Leu
                   320                       325                       330
Asn Gly Glu Phe Ser Arg Gly Lys Gly Leu Asp Val Gly Ala Arg
                   335                       340                       345
Phe Trp Lys Gly Ser Asn Val Leu Leu Phe Phe Cys Asp Val Asp
                   350                       355                       360
Ile Tyr Phe Thr Ser Glu Phe Leu Asn Thr Cys Arg Leu Asn Thr
                   365                       370                       375
Gln Pro Gly Lys Lys Val Phe Tyr Pro Val Leu Phe Ser Gln Tyr
```

230

```
                  380              385              390
Asn Pro Gly Ile Ile Tyr Gly His His Asp Ala Val Pro Pro Leu
                395              400              405
Glu Gln Gln Leu Val Ile Lys Lys Glu Thr Gly Phe Trp Arg Asp
                410              415              420
Phe Gly Phe Gly Met Thr Cys Gln Tyr Arg Ser Asp Phe Ile Asn
                425              430              435
Ile Gly Gly Phe Asp Leu Asp Ile Lys Gly Trp Gly Gly Glu Asp
                440              445              450
Val His Leu Tyr Arg Lys Tyr Leu His Ser Asn Leu Ile Val Val
                455              460              465
Arg Thr Pro Val Arg Gly Leu Phe His Leu Trp His Glu Lys Arg
                470              475              480
Cys Met Asp Glu Leu Thr Pro Glu Gln Tyr Lys Met Cys Met Gln
                485              490              495
Ser Lys Ala Met Asn Glu Ala Ser His Gly Gln Leu Gly Met Leu
                500              505              510
Val Phe Arg His Glu Ile Glu Ala His Leu Arg Lys Gln Lys Gln
                515              520              525
Lys Thr Ser Ser Lys Lys Thr
                530
```

<210> 181
<211> 2498
<212> DNA
<213> Homosapiens

<400> 181
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 tcggggaacc ccgcgcccgg tggtgtttgc tggctccagc agggccagga 150
 ggccacctgc agcctggtgc tccagactga tgtcacccgg gccgagtgct 200
 gtgcctccgg caacattgac accgcctggt ccaacctcac ccacccgggg 250
 aacaagatca acctcctcgg cttcttgggc cttgtccact gccttccctg 300
 caaagattcg tgcgacggcg tggagtgcgg cccgggcaag gcgtgccgca 350
 tgctgggggg ccgcccgcgc tgcgagtgcg cgcccgactg ctcggggctc 400
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 gtgcgagctg cgcgccgcgc gctgccgcgg ccacccggac ctgagcgtca 500
 tgtaccgggg ccgctgccgc aagtcctgtg agcacgtggt gtgcccgcgg 550
 ccacagtcgt gcgtcgtgga ccagacgggc agcgcccact gcgtggtgtg 600
 tcgagcggcg ccctgccctg tgccctccag ccccggccag gagctttgcg 650
```

231

```
gcaacaacaa cgtcacctac atctcctcgt gccacatgcg ccaggccacc 700

tgcttcctgg gccgctccat cggcgtgcgc cacgcgggca gctgcgcagg 750

cacccctgag gagccgccag gtggtgagtc tgcagaagag gaagagaact 800

tcgtgtgagc ctgcaggaca ggcctgggcc tggtgcccga ggccccccat 850

catcccctgt tatttattgc cacagcagag tctaatttat atgccacgga 900

cactccttag agcccggatt cggaccactt ggggatccca gaacctccct 950

gacgatatcc tggaaggact gaggaaggga ggcctggggg ccggctggtg 1000

ggtgggatag acctgcgttc cggacactga gcgcctgatt tagggccctt 1050

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gagggctggg cattctctgc tggtaattcc tgaagaggca tgactgcttt 1200

tctcagcccc aagcctctag tctgggtgtg tacggagggt ctagcctggg 1250

tgtgtacgga gggtctagcc tgggtgagta cggagggtct agcctgggtg 1300

agtacggagg gtctagcctg ggtgagtacg gagggtctag cctgggtgtg 1350

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caagaaggct gccaccattc cctgccagcc caagaactcc agcttcccca 1650

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cttggccaca gaaccaccca gcgtctcccc tgctgctgtc cacgtcagtt 1800

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agccaggtgc tggtcttggg ccagttctcc cacgacggct caccctcccc 2200

tccatctgcg ttgatgctca gaatcgccta cctgtgcctg cgtgtaaacc 2250
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ctcctccagc ccccaggcag tgccttacct gtggtgccca gaaaagtgcc 2400

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<210> 182
<211> 263
<212> PRT
<213> Homosapiens

<400> 182

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Met Arg Pro Gly Ala Pro Gly Pro Leu Trp Pro Leu Pro Trp Gly
 1               5                  10                  15

Ala Leu Ala Trp Ala Val Gly Phe Val Ser Ser Met Gly Ser Gly
                20                  25                  30

Asn Pro Ala Pro Gly Gly Val Cys Trp Leu Gln Gln Gly Gln Glu
                35                  40                  45

Ala Thr Cys Ser Leu Val Leu Gln Thr Asp Val Thr Arg Ala Glu
                50                  55                  60

Cys Cys Ala Ser Gly Asn Ile Asp Thr Ala Trp Ser Asn Leu Thr
                65                  70                  75

His Pro Gly Asn Lys Ile Asn Leu Leu Gly Phe Leu Gly Leu Val
                80                  85                  90

His Cys Leu Pro Cys Lys Asp Ser Cys Asp Gly Val Glu Cys Gly
                95                  100                 105

Pro Gly Lys Ala Cys Arg Met Leu Gly Gly Arg Pro Arg Cys Glu
                110                 115                 120

Cys Ala Pro Asp Cys Ser Gly Leu Pro Ala Arg Leu Gln Val Cys
                125                 130                 135

Gly Ser Asp Gly Ala Thr Tyr Arg Asp Glu Cys Glu Leu Arg Ala
                140                 145                 150

Ala Arg Cys Arg Gly His Pro Asp Leu Ser Val Met Tyr Arg Gly
                155                 160                 165

Arg Cys Arg Lys Ser Cys Glu His Val Val Cys Pro Arg Pro Gln
                170                 175                 180

Ser Cys Val Val Asp Gln Thr Gly Ser Ala His Cys Val Val Cys
                185                 190                 195

Arg Ala Ala Pro Cys Pro Val Pro Ser Ser Pro Gly Gln Glu Leu
                200                 205                 210

Cys Gly Asn Asn Asn Val Thr Tyr Ile Ser Ser Cys His Met Arg
                215                 220                 225

Gln Ala Thr Cys Phe Leu Gly Arg Ser Ile Gly Val Arg His Ala
                230                 235                 240
```

233

```
Gly Ser Cys Ala Gly Thr Pro Glu Glu Pro Pro Gly Gly Glu Ser
            245                 250             255

Ala Glu Glu Glu Glu Asn Phe Val
            260
```

<210> 183
<211> 1808
<212> DNA
<213> Homosapiens

<400> 183

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tcctacattt tagacatttg tttgtttctc ttggtagcct ttaaattcct 150

tgaagcccag gaccatgtct cacttacctt tgtgtttcca ctaactagtc 200

tacctcctgg aattggcaga tactcagtga aagcctgtga aataagtgat 250

gtctatttct agcatattat tctgagattt aatgatagat ttagtgattg 300

aatgagattt ccattttcaa atacagcaaa agcataacta ttttcattca 350

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aattaccttt gaaatgtgtg ggttatttga ggcaatcagg tggtgacatt 450

gagctctcag ccagagtttg tttctggaat tgattcagtt ccattgcatt 500

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gaattgggct gtgattcttg ctgcgtttaa gtaaaggaag cctcttggtt 600

ctagttctgc aaacttacac actgaactgg acaagtttt tgtttagagt 650

aatggctggg aaaagaggaa cctttcattt tattcagaag tcaaaaacaa 700

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cctcaccgag tttgctccag gagtatattg aaaacatacc cagtgctctc 1000

tcaagcaccc actgcttaga gggcccagat ttcttttcct tctttccctt 1050

gcagagctgg agactgcatc gggcatctgg tgtttaaact aaacaggaaa 1100

actgactaaa ggtccacagt gctcattgtg tagactagct gccctccgat 1150

gggtgctctg attatcagtg gttccagtgc agggcctgtc actaaacagg 1200

cctcacttcc tccttggggg ctttcccatg ggaggtgtgg cttttactc 1250

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234

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gccttcctgg aagtattttt gttgatgagt cgtctgtcat tattctctaa 1450

aatgatttgc tttttgtttc tttcattcct atttccaccc cacatataca 1500

cacatgcttc ttaacttagg ggattacatg ccaataaatc tattgttgaa 1550

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agtccatcgt caagttgaaa aatcaaaatc aagccatctt aggttgagga 1700

ccatttgttt gtacctccaa agatgtcata tctttaaaca tactccctag 1750

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gcaaaaaa 1808

<210> 184
<211> 121
<212> PRT
<213> Homosapiens

<400> 184

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Lys Gln Ala Ser Leu Pro Pro Trp Gly Leu Ser His Gly Arg Cys
                20              25                  30

Gly Phe Leu Leu Tyr Met Glu Met Thr Leu Cys Ser His Arg Thr
                35              40                  45

Gln Ser Phe Ser Glu Leu Ser Gln Ser Leu Met Arg Pro Gly Phe
                50              55                  60

Leu Gln Met Pro Tyr Ile Ser Cys Ala Lys Leu Ser Lys Ile Trp
                65              70                  75

Phe Pro Ala Ser Lys Pro Cys Leu Leu Ala Phe Leu Glu Val Phe
                80              85                  90

Leu Leu Met Ser Arg Leu Ser Leu Phe Ser Lys Met Ile Cys Phe
                95              100                 105

Leu Phe Leu Ser Phe Leu Phe Pro Pro His Ile Tyr Thr His Ala
                110             115                 120

Ser
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<210> 185
<211> 1371
<212> DNA
<213> Homosapiens

<400> 185

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235

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gcctgtgcac tgatgatcat aatagtaatt gtagtggtcc tcttccagca 650

ttaccggaaa aagcgatggg ccgaaagagc tcataaagtg gtggagataa 700

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ccacattctc aattaaaagg tgagctaagc ctcctcggtg tttctgatta 1250

acagtaaatc ctaaattcaa actgttaaat gacatttta tttttatgtc 1300

tctccttaac tatgagacac atcttgtttt actgaatttc tttcaatatt 1350

ccaggtgata gatttttgtc g 1371
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&lt;210&gt; 186
&lt;211&gt; 215
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 186
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Met Tyr Gly Lys Ser Ser Thr Arg Ala Val Leu Leu Leu Leu Gly
 1               5                   10                  15
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Ile Gln Leu Thr Ala Leu Trp Pro Ile Ala Ala Val Glu Ile Tyr
            20              25                          30

Thr Ser Arg Val Leu Glu Ala Val Asn Gly Thr Asp Ala Arg Leu
            35              40                          45

Lys Cys Thr Phe Ser Ser Phe Ala Pro Val Gly Asp Ala Leu Thr
            50              55                          60

Val Thr Trp Asn Phe Arg Pro Leu Asp Gly Gly Pro Glu Gln Phe
            65              70                          75

Val Phe Tyr Tyr His Ile Asp Pro Phe Gln Pro Met Ser Gly Arg
            80              85                          90

Phe Lys Asp Arg Val Ser Trp Asp Gly Asn Pro Glu Arg Tyr Asp
            95              100                         105

Ala Ser Ile Leu Leu Trp Lys Leu Gln Phe Asp Asp Asn Gly Thr
            110             115                         120

Tyr Thr Cys Gln Val Lys Asn Pro Pro Asp Val Asp Gly Val Ile
            125             130                         135

Gly Glu Ile Arg Leu Ser Val Val His Thr Val Arg Phe Ser Glu
            140             145                         150

Ile His Phe Leu Ala Leu Ala Ile Gly Ser Ala Cys Ala Leu Met
            155             160                         165

Ile Ile Ile Val Ile Val Val Val Leu Phe Gln His Tyr Arg Lys
            170             175                         180

Lys Arg Trp Ala Glu Arg Ala His Lys Val Val Glu Ile Lys Ser
            185             190                         195

Lys Glu Glu Glu Arg Leu Asn Gln Glu Lys Lys Val Ser Val Tyr
            200             205                         210

Leu Glu Asp Thr Asp
            215
```

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<210> 187
<211> 471
<212> DNA
<213> Homosapiens

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 atccgacaac agctgctcca gctgacacgt atccagctac tggtcctgct 150

 gatgatgaag cccctgatgc tgaaaccact gctgctgcaa ccactgcgac 200

 cactgctgct cctaccactg caaccaccgc tgcttctacc actgctcgta 250

 aagacattcc agttttaccc aaatgggttg gggatctccc gaatggtaga 300

 gtgtgtccct gagatggaat cagcttgagt cttctgcaat tggtcacaac 350

 tattcatgct tcctgtgatt tcatccaact acttaccttg cctacgatat 400
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237

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cccctttatc tctaatcagt ttattttctt tcaaataaaa aataactatg 450

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<210> 188
<211> 90
<212> PRT
<213> Homosapiens

<400> 188

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Met Lys Phe Leu Ala Val Leu Val Leu Leu Gly Val Ser Ile Phe
 1               5                  10                  15

Leu Val Ser Ala Gln Asn Pro Thr Thr Ala Ala Pro Ala Asp Thr
                20                  25                  30

Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
                35                  40                  45

Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
                50                  55                  60

Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
                65                  70                  75

Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
                80                  85                  90
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<210> 189
<211> 2213
<212> DNA
<213> Homosapiens

<400> 189

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aaagaaggag atggtgttat ctgaaaaggt tagtcagctg atggaatgga 150

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gtgaaagccc caccgagaaa ttactccgtt atcgtcatgt tcactgctct 250

ccaactgcat agacagtgtg tcgtttgcaa gcaagctgat gaagaattcc 300

agatcctggc aaactcctgg cgatactcca gtgcattcac caacaggata 350

tttttttgcca tggtggattt tgatgaaggc tctgatgtat ttcagatgct 400

aaacatgaat tcagctccaa ctttcatcaa ctttcctgca aaagggaaac 450

ccaaacgggg tgatacatat gagttacagg tgcggggttt ttcagctgag 500

cagattgccc ggtggatcgc cgacagaact gatgtcaata ttagagtgat 550

tagacccccaa aattatgctg gtccccttat gttgggattg cttttggctg 600

ttattggtgg acttgtgtat cttcgaagaa gtaatatgga atttctcttt 650

aataaaactg gatgggcttt tgcagctttg tgttttgtgc ttgctatgac 700

atctggtcaa atgtggaacc atataagagg accaccatat gcccataaga 750
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aggaatggtg cttttatgtg aagctgctac ctctgacatg gatattggaa 900

agcgaaagat aatgtgtgtg gctggtattg gacttgttgt attattcttc 950

agttggatgc tctctatttt tagatctaaa tatcatggct acccatacag 1000

ctttctgatg agttaaaaag gtcccagaga tatatagaca ctggagtact 1050

ggaaattgaa aaacgaaaat cgtgtgtgtt tgaaaagaag aatgcaactt 1100

gtatattttg tattacctct ttttttcaag tgatttaaat agttaatcat 1150

ttaaccaaag aagatgtgta gtgccttaac aagcaatcct ctgtcaaaat 1200

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aactactact ttgttttagt tagaacaaag ctcaaaacta ctttagttaa 1350

cttggtcatc tgattttata ttgccttatc caaagatggg gaaagtaagt 1400

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cagttagaaa aggactccct ggccaggcgc agtgacttac gcctgtaatc 1950

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gaccatcctg gccaacatgg tgaaaccccg tctctactaa aaatataaaa 2050

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aaaaaaaaaa aaa 2213
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<210> 190
<211> 335
<212> PRT

239

<213> Homosapiens

<400> 190

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                20                  25                  30

Arg Lys Lys Glu Met Val Leu Ser Glu Lys Val Ser Gln Leu Met
                35                  40                  45

Glu Trp Thr Asn Lys Arg Pro Val Ile Arg Met Asn Gly Asp Lys
                50                  55                  60

Phe Arg Arg Leu Val Lys Ala Pro Pro Arg Asn Tyr Ser Val Ile
                65                  70                  75

Val Met Phe Thr Ala Leu Gln Leu His Arg Gln Cys Val Val Cys
                80                  85                  90

Lys Gln Ala Asp Glu Glu Phe Gln Ile Leu Ala Asn Ser Trp Arg
                95                  100                 105

Tyr Ser Ser Ala Phe Thr Asn Arg Ile Phe Phe Ala Met Val Asp
                110                 115                 120

Phe Asp Glu Gly Ser Asp Val Phe Gln Met Leu Asn Met Asn Ser
                125                 130                 135

Ala Pro Thr Phe Ile Asn Phe Pro Ala Lys Gly Lys Pro Lys Arg
                140                 145                 150

Gly Asp Thr Tyr Glu Leu Gln Val Arg Gly Phe Ser Ala Glu Gln
                155                 160                 165

Ile Ala Arg Trp Ile Ala Asp Arg Thr Asp Val Asn Ile Arg Val
                170                 175                 180

Ile Arg Pro Pro Asn Tyr Ala Gly Pro Leu Met Leu Gly Leu Leu
                185                 190                 195

Leu Ala Val Ile Gly Gly Leu Val Tyr Leu Arg Arg Ser Asn Met
                200                 205                 210

Glu Phe Leu Phe Asn Lys Thr Gly Trp Ala Phe Ala Ala Leu Cys
                215                 220                 225

Phe Val Leu Ala Met Thr Ser Gly Gln Met Trp Asn His Ile Arg
                230                 235                 240

Gly Pro Pro Tyr Ala His Lys Asn Pro His Thr Gly His Val Asn
                245                 250                 255

Tyr Ile His Gly Ser Ser Gln Ala Gln Phe Val Ala Glu Thr His
                260                 265                 270

Ile Val Leu Leu Phe Asn Gly Gly Val Thr Leu Gly Met Val Leu
                275                 280                 285

Leu Cys Glu Ala Ala Thr Ser Asp Met Asp Ile Gly Lys Arg Lys
                290                 295                 300
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240

Ile Met Cys Val Ala Gly Ile Gly Leu Val Val Leu Phe Phe Ser
                305                 310                 315

Trp Met Leu Ser Ile Phe Arg Ser Lys Tyr His Gly Tyr Pro Tyr
                320                 325                 330

Ser Phe Leu Met Ser
                335

<210> 191
<211> 1475
<212> DNA
<213> Homosapiens

<400> 191
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gcttctactg agaggtctgc catggcctct cttggcctcc aacttgtggg 150

ctacatccta ggccttctgg ggcttttggg cacactggtt gccatgctgc 200

tccccagctg gaaaacaagt tcttatgtcg gtgccagcat tgtgacagca 250

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tccaggctgc ccaggccatg atggtgacat ccagtgcaat ctcctccctg 400

gcctgcatta tctctgtggt gggcatgaga tgcacagtct tctgccagga 450

atcccgagcc aaagacagag tggcggtagc aggtggagtc tttttcatcc 500

ttggaggcct cctgggattc attcctgttg cctggaatct tcatgggatc 550

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tggagaggct ctttacttgg gcattatttc ttccctgttc tccctgatag 650

ctggaatcat cctctgcttt tcctgctcat cccagagaaa tcgctccaac 700

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attgccaagg atgctcgcca tgccagcctt tctgttttcc tcaccttgct 1050

gctcccctgc cctaagtccc caaccctcaa cttgaaaccc cattcccctta 1100

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gagaagcagt ggcttttgtg ggcattgctc taacctactt ctcaagcttc 1300

cctccaaaga aactgattgg ccctggaacc tccatcccac tcttgttatg 1350

actccacagt gtccagacta atttgtgcat gaactgaaat aaaaccatcc 1400

tacggtatcc agggaacaga aagcaggatg caggatggga ggacaggaag 1450

gcagcctggg acatttaaaa aaata 1475

<210> 192
<211> 230
<212> PRT
<213> Homosapiens

<400> 192

Met Ala Ser Leu Gly Leu Gln Leu Val Gly Tyr Ile Leu Gly Leu
1               5                  10                  15

Leu Gly Leu Leu Gly Thr Leu Val Ala Met Leu Leu Pro Ser Trp
                20                  25                  30

Lys Thr Ser Ser Tyr Val Gly Ala Ser Ile Val Thr Ala Val Gly
                35                  40                  45

Phe Ser Lys Gly Leu Trp Met Glu Cys Ala Thr His Ser Thr Gly
                50                  55                  60

Ile Thr Gln Cys Asp Ile Tyr Ser Thr Leu Leu Gly Leu Pro Ala
                65                  70                  75

Asp Ile Gln Ala Ala Gln Ala Met Met Val Thr Ser Ser Ala Ile
                80                  85                  90

Ser Ser Leu Ala Cys Ile Ile Ser Val Val Gly Met Arg Cys Thr
                95                  100                 105

Val Phe Cys Gln Glu Ser Arg Ala Lys Asp Arg Val Ala Val Ala
                110                 115                 120

Gly Gly Val Phe Phe Ile Leu Gly Gly Leu Leu Gly Phe Ile Pro
                125                 130                 135

Val Ala Trp Asn Leu His Gly Ile Leu Arg Asp Phe Tyr Ser Pro
                140                 145                 150

Leu Val Pro Asp Ser Met Lys Phe Glu Ile Gly Glu Ala Leu Tyr
                155                 160                 165

Leu Gly Ile Ile Ser Ser Leu Phe Ser Leu Ile Ala Gly Ile Ile
                170                 175                 180

Leu Cys Phe Ser Cys Ser Ser Gln Arg Asn Arg Ser Asn Tyr Tyr
                185                 190                 195

Asp Ala Tyr Gln Ala Gln Pro Leu Ala Thr Arg Ser Ser Pro Arg
                200                 205                 210

Pro Gly Gln Pro Pro Lys Val Lys Ser Glu Phe Asn Ser Tyr Ser
                215                 220                 225

Leu Thr Gly Tyr Val
                230

<210> 193
<211> 771
<212> DNA
<213> Homosapiens

<400> 193
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 gtggggacaa gttctacgac cccctgcagc actgttgcta tgatgatgcc 200

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 agctaatgga acatcagggg aacgatgact cctggattct ccttcctggg 400

 tgggcctgga gaaagaggct ggtgttacct gagatctggg atgctgagtg 450

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 tatgtacttt ataaatgaaa a 771

<210> 194
<211> 110
<212> PRT
<213> Homosapiens

<400> 194
 Met Ala Pro Arg Gly Cys Ile Val Ala Val Phe Ala Ile Phe Cys
   1               5                  10                  15

 Ile Ser Arg Leu Leu Cys Ser His Gly Àla Pro Val Ala Pro Met
                  20                  25                  30

 Thr Pro Tyr Leu Met Leu Cys Gln Pro His Lys Arg Cys Gly Asp
                  35                  40                  45

 Lys Phe Tyr Asp Pro Leu Gln His Cys Cys Tyr Asp Asp Ala Val
                  50                  55                  60

 Val Pro Leu Ala Arg Thr Gln Thr Cys Gly Asn Cys Thr Phe Arg
                  65                  70                  75

 Val Cys Phe Glu Gln Cys Cys Pro Trp Thr Phe Met Val Lys Leu

243

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                    80                    85                    90
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                    95                   100                   105

Cys Arg Ser Val Ser
                   110

<210> 195
<211> 728
<212> DNA
<213> Homosapiens

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 cagacactct caagaggatg gggagatgac atcacttggg tacaaactta 200

 tgaagaaggt ctcttttatg ctcaaaaaag taagaagcca ttaatggtta 250

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 gcccaaaatg aagaaataca agaaatggct cagaataagt tcatcatgct 350

 aaaccttatg catgaaacca ctgataagaa tttatcacct gatgggcaat 400

 atgtgcctag aatcatgttt gtagaccctt ctttaacagt tagagctgac 450

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 catgaagaaa acctctggca cattgacaaa tactaaatgt gcaagtatat 650

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<210> 196
<211> 166
<212> PRT
<213> Homosapiens

<400> 196
 Met Met Leu His Ser Ala Leu Gly Leu Cys Leu Leu Leu Val Thr
   1               5                  10                  15

 Val Ser Ser Asn Leu Ala Ile Ala Ile Lys Lys Glu Lys Arg Pro
                  20                  25                  30

 Pro Gln Thr Leu Ser Arg Gly Trp Gly Asp Asp Ile Thr Trp Val
                  35                  40                  45

 Gln Thr Tyr Glu Glu Gly Leu Phe Tyr Ala Gln Lys Ser Lys Lys
                  50                  55                  60

 Pro Leu Met Val Ile His His Leu Glu Asp Cys Gln Tyr Ser Gln

|  |  |  | 65 |  |  |  |  | 70 |  |  |  |  | 75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Ala Leu Lys Lys Val Phe Ala Gln Asn Glu Glu Ile Gln Glu Met
                    80                  85                  90

Ala Gln Asn Lys Phe Ile Met Leu Asn Leu Met His Glu Thr Thr
                    95                 100                 105

Asp Lys Asn Leu Ser Pro Asp Gly Gln Tyr Val Pro Arg Ile Met
                   110                 115                 120

Phe Val Asp Pro Ser Leu Thr Val Arg Ala Asp Ile Ala Gly Arg
                   125                 130                 135

Tyr Ser Asn Arg Leu Tyr Thr Tyr Glu Pro Arg Asp Leu Pro Leu
                   140                 145                 150

Leu Ile Glu Asn Met Lys Lys Ala Leu Arg Leu Ile Gln Ser Glu
                   155                 160                 165

Leu


<210> 197
<211> 2044
<212> DNA
<213> Homosapiens

<400> 197
 gggggcgggt gcctggagca cggcgctggg gccgcccgca gcgctcactc 50

 gctcgcactc agtcgcggga ggcttccccg cgccggccgc gtcccgcccg 100

 ctccccggca ccagaagttc tctgcgcgt ccgacggcga catgggcgtc 150

 cccacggccc tggaggccgg cagctggcgc tggggatccc tgctcttcgc 200

 tctcttcctg gctgcgtccc taggtccggt ggcagccttc aaggtcgcca 250

 cgccgtattc cctgtatgtc tgtcccgagg ggcagaacgt caccctcacc 300

 tgcaggctct tgggccctgt ggacaaaggg cacgatgtga ccttctacaa 350

 gacgtggtac cgcagctcga ggggcgaggt gcagacctgc tcagagcgcc 400

 ggcccatccg caacctcacg ttccaggacc ttcacctgca ccatggaggc 450

 caccaggctg ccaacaccag ccacgacctg gctcagcgcc acgggctgga 500

 gtcggcctcc gaccaccatg gcaacttctc catcaccatg cgcaacctga 550

 ccctgctgga tagcggcctc tactgctgcc tggtggtgga gatcaggcac 600

 caccactcgg agcacagggt ccatggtgcc atggagctgc aggtgcagac 650

 aggcaaagat gcaccatcca actgtgtggt gtacccatcc tcctcccagg 700

 atagtgaaaa catcacggct gcagccctgg ctacgggtgc ctgcatcgta 750

 ggaatcctct gcctccccct catcctgctc ctggtctaca agcaaaggca 800

 ggcagcctcc aaccgccgtg cccaggagct ggtgcggatg gacagcaaca 850

```
ttcaagggat tgaaaacccc ggctttgaag cctcaccacc tgcccagggg 900

atacccgagg ccaaagtcag gcaccccctg tcctatgtgg cccagcggca 950

gccttctgag tctgggcggc atctgctttc ggagcccagc acccccctgt 1000

ctcctccagg ccccggagac gtcttcttcc catccctgga ccctgtccct 1050

gactctccaa actttgaggt catctagccc agctggggga cagtgggctg 1100

ttgtggctgg gtctggggca ggtgcatttg agccagggct ggctctgtga 1150

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atggggatgc tggacggctc agcccctgtt ccaaggattt tggggtgctg 1300

agattctccc ctagagacct gaaattcacc agctacagat gccaaatgac 1350

ttacatctta agaagtctca gaacgtccag cccttcagca gctctcgttc 1400

tgagacatga gccttgggat gtggcagcat cagtgggaca agatggacac 1450

tgggccaccc tcccaggcac cagacacagg gcacggtgga gagacttctc 1500

ccccgtggcc gccttggctc ccccgttttg cccgaggctg ctcttctgtc 1550

agacttcctc tttgtaccac agtggctctg gggccaggcc tgcctgccca 1600

ctggccatcg ccaccttccc cagctgcctc ctaccagcag tttctctgaa 1650

gatctgtcaa caggttaagt caatctgggg cttccactgc ctgcattcca 1700

gtccccagag cttggtggtc ccgaaacggg aagtacatat tggggcatgg 1750

tggcctccgt gagcaaatgg tgtcttgggc aatctgaggc caggacagat 1800

gttgccccac ccactggaga tggtgctgag ggaggtgggt ggggccttct 1850

gggaaggtga gtggagaggg gcacctgccc cccgccctcc ccatccccta 1900

ctcccactgc tcagcgcggg ccattgcaag ggtgccacac aatgtcttgt 1950

ccaccctggg acacttctga gtatgaagcg ggatgctatt aaaaactaca 2000

tggggaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaga 2044
```

<210> 198
<211> 311
<212> PRT
<213> Homosapiens

<400> 198

| Met | Gly | Val | Pro | Thr | Ala | Leu | Glu | Ala | Gly | Ser | Trp | Arg | Trp | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

| Ser | Leu | Leu | Phe | Ala | Leu | Phe | Leu | Ala | Ala | Ser | Leu | Gly | Pro | Val |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |

| Ala | Ala | Phe | Lys | Val | Ala | Thr | Pro | Tyr | Ser | Leu | Tyr | Val | Cys | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |

```
Glu Gly Gln Asn Val Thr Leu Thr Cys Arg Leu Leu Gly Pro Val
                50                  55                      60

Asp Lys Gly His Asp Val Thr Phe Tyr Lys Thr Trp Tyr Arg Ser
                65                  70                      75

Ser Arg Gly Glu Val Gln Thr Cys Ser Glu Arg Arg Pro Ile Arg
                80                  85                      90

Asn Leu Thr Phe Gln Asp Leu His Leu His His Gly Gly His Gln
                95                  100                     105

Ala Ala Asn Thr Ser His Asp Leu Ala Gln Arg His Gly Leu Glu
                110                 115                     120

Ser Ala Ser Asp His His Gly Asn Phe Ser Ile Thr Met Arg Asn
                125                 130                     135

Leu Thr Leu Leu Asp Ser Gly Leu Tyr Cys Cys Leu Val Val Glu
                140                 145                     150

Ile Arg His His His Ser Glu His Arg Val His Gly Ala Met Glu
                155                 160                     165

Leu Gln Val Gln Thr Gly Lys Asp Ala Pro Ser Asn Cys Val Val
                170                 175                     180

Tyr Pro Ser Ser Ser Gln Asp Ser Glu Asn Ile Thr Ala Ala Ala
                185                 190                     195

Leu Ala Thr Gly Ala Cys Ile Val Gly Ile Leu Cys Leu Pro Leu
                200                 205                     210

Ile Leu Leu Leu Val Tyr Lys Gln Arg Gln Ala Ala Ser Asn Arg
                215                 220                     225

Arg Ala Gln Glu Leu Val Arg Met Asp Ser Asn Ile Gln Gly Ile
                230                 235                     240

Glu Asn Pro Gly Phe Glu Ala Ser Pro Pro Ala Gln Gly Ile Pro
                245                 250                     255

Glu Ala Lys Val Arg His Pro Leu Ser Tyr Val Ala Gln Arg Gln
                260                 265                     270

Pro Ser Glu Ser Gly Arg His Leu Leu Ser Glu Pro Ser Thr Pro
                275                 280                     285

Leu Ser Pro Pro Gly Pro Gly Asp Val Phe Phe Pro Ser Leu Asp
                290                 295                     300

Pro Val Pro Asp Ser Pro Asn Phe Glu Val Ile
                305                 310
```

```
<210> 199
<211> 693
<212> DNA
<213> Homosapiens

<400> 199
 ctagcctgcg ccaagggggta gtgagaccgc gcggcaacag cttgcggctg 50

 cggggagctc ccgtgggcgc tccgctggct gtgcaggcgg ccatggattc 100
```

```
    cttgcggaaa atgctgatct cagtcgcaat gctgggcgca ggggctggcg 150

    tgggctacgc gctcctcgtt atcgtgaccc cgggagagcg gcggaagcag 200

    gaaatgctaa aggagatgcc actgcaggac ccaaggagca gggaggaggc 250

    ggccaggacc cagcagctat tgctggccac tctgcaggag cagcgacca  300

    cgcaggagaa cgtggcctgg aggaagaact ggatggttgg cggcgaaggc 350

    ggcgccagcg ggaggtcacc gtgagaccgg acttgcctcc gtgggcgccg 400

    gaccttggct tgggcgcagg aatccgaggc agcctttctc cttcgtgggc 450

    ccagcggaga gtccggaccg agataccatg ccaggactct ccggggtcct 500

    gtgagctgcc gtcgggtgag cacgtttccc ccaaaccctg gactgactgc 550

    tttaaggtcc gcaaggcggg ccagggccga gacgcgagtc ggatgtggtg 600

    aactgaaaga accaataaaa tcatgttcct ccaaaaaaaa aaaaaaaaa  650

    aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa       693
```

<210> 200
<211> 93
<212> PRT
<213> Homosapiens

<400> 200

```
 Met Asp Ser Leu Arg Lys Met Leu Ile Ser Val Ala Met Leu Gly
  1               5                  10                  15

 Ala Gly Ala Gly Val Gly Tyr Ala Leu Leu Val Ile Val Thr Pro
              20                  25                  30

 Gly Glu Arg Arg Lys Gln Glu Met Leu Lys Glu Met Pro Leu Gln
              35                  40                  45

 Asp Pro Arg Ser Arg Glu Glu Ala Ala Arg Thr Gln Gln Leu Leu
              50                  55                  60

 Leu Ala Thr Leu Gln Glu Ala Ala Thr Thr Gln Glu Asn Val Ala
              65                  70                  75

 Trp Arg Lys Asn Trp Met Val Gly Gly Glu Gly Gly Ala Ser Gly
              80                  85                  90

 Arg Ser Pro
```

<210> 201
<211> 2052
<212> DNA
<213> Homosapiens

<400> 201

```
 gacagctgtg tctcgatgga gtagactctc agaacagcgc agtttgccct 50

 ccgctcacgc agagcctctc cgtggcttcc gcaccttgag cattaggcca 100

 gttctcctct tctctctaat ccatccgtca cctctcctgt catccgtttc 150
```

248

```
catgccgtga ggtccattca cagaacacat ccatggctct catgctcagt 200

ttggttctga gtctcctcaa gctgggatca gggcagtggc aggtgtttgg 250

gccagacaag cctgtccagg ccttggtggg ggaggacgca gcattctcct 300

gtttcctgtc tcctaagacc aatgcagagg ccatggaagt gcggttcttc 350

aggggccagt tctctagcgt ggtccacctc tacagggacg ggaaggacca 400

gccatttatg cagatgccac agtatcaagg caggacaaaa ctggtgaagg 450

attctattgc ggaggggcgc atctctctga ggctggaaaa cattactgtg 500

ttggatgctg gcctctatgg gtgcaggatt agttcccagt cttactacca 550

gaaggccatc tgggagctac aggtgtcagc actgggctca gttcctctca 600

tttccatcac gggatatgtt gatagagaca tccagctact ctgtcagtcc 650

tcgggctggt tcccccggcc cacagcgaag tggaaaggtc cacaaggaca 700

ggatttgtcc acagactcca ggacaaacag agacatgcat ggcctgtttg 750

atgtggagat ctctctgacc gtccaagaga cgccgggag catatcctgt 800

tccatgcggc atgctcatct gagccgagag gtggaatcca gggtacagat 850

aggagatacc tttttcgagc ctatatcgtg gcacctggct accaaagtac 900

tgggaatact ctgctgtggc ctattttttg gcattgttgg actgaagatt 950

ttcttctcca aattccagtg gaaaatccag gcggaactgg actggagaag 1000

aaagcacgga caggcagaat tgagagacgc ccggaaacac gcagtggagg 1050

tgactctgga tccagagacg gctcacccga agctctgcgt ttctgatctg 1100

aaaactgtaa cccatagaaa agctccccag gaggtgcctc actctgagaa 1150

gagatttaca aggaagagtg tggtggcttc tcagagtttc caagcaggga 1200

aacattactg ggaggtggac ggaggacaca ataaaaggtg cgcgtggga 1250

gtgtgccggg atgatgtgga caggaggaag gagtacgtga ctttgtctcc 1300

cgatcatggg tactgggtcc tcagactgaa tggagaacat ttgtatttca 1350

cattaaatcc ccgttttatc agcgtcttcc ccaggacccc acctacaaaa 1400

ataggggtct tcctggacta tgagtgtggg accatctcct tcttcaacat 1450

aaatgaccag tcccttattt ataccctgac atgtcggttt gaaggcttat 1500

tgaggcccta cattgagtat ccgtcctata atgagcaaaa tggaactccc 1550

atagtcatct gcccagtcac ccaggaatca gagaaagagg cctcttggca 1600

aagggcctct gcaatcccag agacaagcaa cagtgagtcc tcctcacagg 1650

caaccacgcc cttcctcccc agggggtgaaa tgtaggatga atcacatccc 1700

acattcttct ttagggatat taaggtctct ctcccagatc caaagtcccg 1750
```

249

cagcagccgg ccaaggtggc ttccagatga agggggactg gcctgtccac 1800

atgggagtca ggtgtcatgg ctgccctgag ctgggaggga agaaggctga 1850

cattacattt agtttgctct cactccatct ggctaagtga tcttgaaata 1900

ccacctctca ggtgaagaac cgtcaggaat cccatctca caggctgtgg 1950

tgtagattaa gtagacaagg aatgtgaata atgcttagat cttattgatg 2000

acagagtgta tcctaatggt ttgttcatta tattacactt tcagtaaaaa 2050

aa 2052

<210> 202
<211> 500
<212> PRT
<213> Homosapiens

<400> 202

```
Met Ala Leu Met Leu Ser Leu Val Leu Ser Leu Leu Lys Leu Gly
  1               5                  10                  15

Ser Gly Gln Trp Gln Val Phe Gly Pro Asp Lys Pro Val Gln Ala
               20                  25                  30

Leu Val Gly Glu Asp Ala Ala Phe Ser Cys Phe Leu Ser Pro Lys
               35                  40                  45

Thr Asn Ala Glu Ala Met Glu Val Arg Phe Phe Arg Gly Gln Phe
               50                  55                  60

Ser Ser Val Val His Leu Tyr Arg Asp Gly Lys Asp Gln Pro Phe
               65                  70                  75

Met Gln Met Pro Gln Tyr Gln Gly Arg Thr Lys Leu Val Lys Asp
               80                  85                  90

Ser Ile Ala Glu Gly Arg Ile Ser Leu Arg Leu Glu Asn Ile Thr
               95                 100                 105

Val Leu Asp Ala Gly Leu Tyr Gly Cys Arg Ile Ser Ser Gln Ser
              110                 115                 120

Tyr Tyr Gln Lys Ala Ile Trp Glu Leu Gln Val Ser Ala Leu Gly
              125                 130                 135

Ser Val Pro Leu Ile Ser Ile Thr Gly Tyr Val Asp Arg Asp Ile
              140                 145                 150

Gln Leu Leu Cys Gln Ser Ser Gly Trp Phe Pro Arg Pro Thr Ala
              155                 160                 165

Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Thr Asp Ser Arg
              170                 175                 180

Thr Asn Arg Asp Met His Gly Leu Phe Asp Val Glu Ile Ser Leu
              185                 190                 195

Thr Val Gln Glu Asn Ala Gly Ser Ile Ser Cys Ser Met Arg His
              200                 205                 210

Ala His Leu Ser Arg Glu Val Glu Ser Arg Val Gln Ile Gly Asp
```

250

```
                      215                  220                  225
Thr Phe Phe Glu Pro Ile Ser Trp His Leu Ala Thr Lys Val Leu
                230                  235                  240

Gly Ile Leu Cys Cys Gly Leu Phe Phe Gly Ile Val Gly Leu Lys
                245                  250                  255

Ile Phe Phe Ser Lys Phe Gln Trp Lys Ile Gln Ala Glu Leu Asp
                260                  265                  270

Trp Arg Arg Lys His Gly Gln Ala Glu Leu Arg Asp Ala Arg Lys
                275                  280                  285

His Ala Val Glu Val Thr Leu Asp Pro Glu Thr Ala His Pro Lys
                290                  295                  300

Leu Cys Val Ser Asp Leu Lys Thr Val Thr His Arg Lys Ala Pro
                305                  310                  315

Gln Glu Val Pro His Ser Glu Lys Arg Phe Thr Arg Lys Ser Val
                320                  325                  330

Val Ala Ser Gln Ser Phe Gln Ala Gly Lys His Tyr Trp Glu Val
                335        .         340                  345

Asp Gly Gly His Asn Lys Arg Trp Arg Val Gly Val Cys Arg Asp
                350                  355                  360

Asp Val Asp Arg Arg Lys Glu Tyr Val Thr Leu Ser Pro Asp His
                365                  370                  375

Gly Tyr Trp Val Leu Arg Leu Asn Gly Glu His Leu Tyr Phe Thr
                380                  385                  390

Leu Asn Pro Arg Phe Ile Ser Val Phe Pro Arg Thr Pro Pro Thr
                395                  400                  405

Lys Ile Gly Val Phe Leu Asp Tyr Glu Cys Gly Thr Ile Ser Phe
                410                  415                  420

Phe Asn Ile Asn Asp Gln Ser Leu Ile Tyr Thr Leu Thr Cys Arg
                425                  430                  435

Phe Glu Gly Leu Leu Arg Pro Tyr Ile Glu Tyr Pro Ser Tyr Asn
                440                  445                  450

Glu Gln Asn Gly Thr Pro Ile Val Ile Cys Pro Val Thr Gln Glu
                455                  460                  465

Ser Glu Lys Glu Ala Ser Trp Gln Arg Ala Ser Ala Ile Pro Glu
                470                  475                  480

Thr Ser Asn Ser Glu Ser Ser Ser Gln Ala Thr Thr Pro Phe Leu
                485                  490                  495

Pro Arg Gly Glu Met
                500
```

<400> 203
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tgcggcgcag tgtagacctg ggaggatggg cggcctgctg ctggctgctt 50

ttctggcttt ggtctcggtg cccagggccc aggccgtgtg gttgggaaga 100

ctggaccctg agcagcttct tgggccctgg tacgtgcttg cggtggcctc 150

ccgggaaaag ggctttgcca tggagaagga catgaagaac gtcgtggggg 200

tggtggtgac cctcactcca gaaacaacc tgcggacgct gtcctctcag 250

cacgggctgg gagggtgtga ccagagtgtc atggacctga taaagcgaaa 300

ctccggatgg gtgtttgaga tccctcaat aggcgtgctg gagctctggg 350

tgctggccac caacttcaga gactatgcca tcatcttcac tcagctggag 400

ttcggggacg agcccttcaa caccgtggag ctgtacagtc tgacggagac 450

agccagccag gaggccatgg ggctcttcac caagtggagc aggagcctgg 500

gcttcctgtc acagtagcag gcccagctgc agaaggacct cacctgtgct 550

cacaagatcc ttctgtgagt gctgcgtccc cagtagggat ggcgcccaca 600

gggtcctgtg acctcggcca gtgtccaccc acctcgctca gcggctcccg 650

gggcccagca ccagctcaga ataaagcgat tccacagca 689
```

<210> 204
<211> 163
<212> PRT
<213> Homosapiens

<400> 204
```
Met Gly Gly Leu Leu Leu Ala Ala Phe Leu Ala Leu Val Ser Val
  1               5                  10                  15

Pro Arg Ala Gln Ala Val Trp Leu Gly Arg Leu Asp Pro Glu Gln
                 20                  25                  30

Leu Leu Gly Pro Trp Tyr Val Leu Ala Val Ala Ser Arg Glu Lys
                 35                  40                  45

Gly Phe Ala Met Glu Lys Asp Met Lys Asn Val Val Gly Val Val
                 50                  55                  60

Val Thr Leu Thr Pro Glu Asn Asn Leu Arg Thr Leu Ser Ser Gln
                 65                  70                  75

His Gly Leu Gly Gly Cys Asp Gln Ser Val Met Asp Leu Ile Lys
                 80                  85                  90

Arg Asn Ser Gly Trp Val Phe Glu Asn Pro Ser Ile Gly Val Leu
                 95                 100                 105

Glu Leu Trp Val Leu Ala Thr Asn Phe Arg Asp Tyr Ala Ile Ile
                110                 115                 120

Phe Thr Gln Leu Glu Phe Gly Asp Glu Pro Phe Asn Thr Val Glu
                125                 130                 135

Leu Tyr Ser Leu Thr Glu Thr Ala Ser Gln Glu Ala Met Gly Leu
```

```
                  140                    145                    150
     Phe Thr Lys Trp Ser Arg Ser Leu Gly Phe Leu Ser Gln
                      155                    160
```

<210> 205
<211> 739
<212> DNA
<213> Homosapiens

<400> 205

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gacgcccagt gacctgccga ggtcggcagc acagagctct ggagatgaag 50

accctgttcc tgggtgtcac gctcggcctg ccgctgccc tgtccttcac 100

cctggaggag gaggatatca cagggacctg gtacgtgaag gccatggtgg 150

tcgataagga ctttccggag gacaggaggc ccaggaaggt gtccccagtg 200

aaggtgacag ccctgggcgg tgggaagttg gaagccacgt tcaccttcat 250

gagggaggat cggtgcatcc agaagaaaat cctgatgcgg aagacggagg 300

agcctggcaa atacagcgcc tatgggggca ggaagctcat gtacctgcag 350

gagctgccca ggagggacca ctacatcttt tactgcaaag accagcacca 400

tggggggcctg ctccacatgg gaaagcttgt gggtaggaat tctgatacca 450

accgggaggc cctggaagaa tttaagaaat tggtgcagcg caagggactc 500

tcggaggagg acattttcac gccctgcag acgggaagct gcgttcccga 550

acactaggca gccccgggt ctgcacctcc agagcccacc ctaccaccag 600

acacagagcc cggaccacct ggacctaccc tccagccatg acccttccct 650

gctcccaccc acctgactcc aaataaagtc cttttccccc aaaaaaaaaa 700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 739
```

<210> 206
<211> 170
<212> PRT
<213> Homosapiens

<400> 206

```
Met Lys Thr Leu Phe Leu Gly Val Thr Leu Gly Leu Ala Ala Ala
  1               5                  10                  15

Leu Ser Phe Thr Leu Glu Glu Glu Asp Ile Thr Gly Thr Trp Tyr
                 20                  25                  30

Val Lys Ala Met Val Val Asp Lys Asp Phe Pro Glu Asp Arg Arg
                 35                  40                  45

Pro Arg Lys Val Ser Pro Val Lys Val Thr Ala Leu Gly Gly Gly
                 50                  55                  60

Lys Leu Glu Ala Thr Phe Thr Phe Met Arg Glu Asp Arg Cys Ile
                 65                  70                  75

Gln Lys Lys Ile Leu Met Arg Lys Thr Glu Glu Pro Gly Lys Tyr
```

```
                    80                    85                    90

Ser Ala Tyr Gly Gly Arg Lys Leu Met Tyr Leu Gln Glu Leu Pro
                95                   100                   105

Arg Arg Asp His Tyr Ile Phe Tyr Cys Lys Asp Gln His His Gly
               110                   115                   120

Gly Leu Leu His Met Gly Lys Leu Val Gly Arg Asn Ser Asp Thr
               125                   130                   135

Asn Arg Glu Ala Leu Glu Glu Phe Lys Lys Leu Val Gln Arg Lys
               140                   145                   150

Gly Leu Ser Glu Glu Asp Ile Phe Thr Pro Leu Gln Thr Gly Ser
               155                   160                   165

Cys Val Pro Glu His
               170
```

<210> 207
<211> 1204
<212> DNA
<213> Homosapiens

<400> 207

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gttccgcaga tgcagaggtt gaggtggctg cgggactgga agtcatcggg  50

cagaggtctc acagcagcca aggaacctgg ggcccgctcc tcccccctcc 100

aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggctt 150

gtaggggggag agaccaggat catcaagggg ttcgagtgca agcctcactc 200

ccagccctgg caggcagccc tgttcgagaa gacgcggcta ctctgtgggg 250

cgacgctcat cgcccccaga tggctcctga cagcagccca ctgcctcaag 300

ccccgctaca tagttcacct ggggcagcac aacctccaga aggaggaggg 350

ctgtgagcag acccggacag ccactgagtc cttcccccac cccggcttca 400

acaacagcct ccccaacaaa gaccaccgca atgacatcat gctggtgaag 450

atggcatcgc cagtctccat cacctgggct gtgcgacccc tcaccctctc 500

ctcacgctgt gtcactgctg caccagctg cctcatttcc ggctggggca 550

gcacgtccag cccccagtta cgcctgcctc acaccttgcg atgcgccaac 600

atcaccatca ttgagcacca gaagtgtgag aacgcctacc ccggcaacat 650

cacagacacc atggtgtgtg ccagcgtgca ggaagggggc aaggactcct 700

gccagggtga ctccgggggc cctctggtct gtaaccagtc tcttcaaggc 750

attatctcct ggggccagga tccgtgtgcg atcacccgaa agcctggtgt 800

ctacacgaaa gtctgcaaat atgtggactg gatccaggag acgatgaaga 850

acaattagac tggacccacc caccacagcc catcacccc tcatttccact 900

tggtgtttgg ttcctgttca ctctgttaat aagaaaccct aagccaagac 950
```

254

```
cctctacgaa cattctttgg gcctcctgga ctacaggaga tgctgtcact 1000

taataatcaa cctggggttc gaaatcagtg agacctggat tcaaattctg 1050

ccttgaaata ttgtgactct gggaatgaca acacctggtt tgttctctgt 1100

tgtatcccca gccccaaaga cagctcctgg ccatatatca aggtttcaat 1150

aaatatttgc taaatgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200

aaaa 1204
```

<210> 208
<211> 250
<212> PRT
<213> Homosapiens

<400> 208

```
Met Arg Ile Leu Gln Leu Ile Leu Leu Ala Leu Ala Thr Gly Leu
 1               5                  10                  15

Val Gly Gly Glu Thr Arg Ile Ile Lys Gly Phe Glu Cys Lys Pro
                20                  25                  30

His Ser Gln Pro Trp Gln Ala Ala Leu Phe Glu Lys Thr Arg Leu
                35                  40                  45

Leu Cys Gly Ala Thr Leu Ile Ala Pro Arg Trp Leu Leu Thr Ala
                50                  55                  60

Ala His Cys Leu Lys Pro Arg Tyr Ile Val His Leu Gly Gln His
                65                  70                  75

Asn Leu Gln Lys Glu Glu Gly Cys Glu Gln Thr Arg Thr Ala Thr
                80                  85                  90

Glu Ser Phe Pro His Pro Gly Phe Asn Asn Ser Leu Pro Asn Lys
                95                  100                 105

Asp His Arg Asn Asp Ile Met Leu Val Lys Met Ala Ser Pro Val
                110                 115                 120

Ser Ile Thr Trp Ala Val Arg Pro Leu Thr Leu Ser Ser Arg Cys
                125                 130                 135

Val Thr Ala Gly Thr Ser Cys Leu Ile Ser Gly Trp Gly Ser Thr
                140                 145                 150

Ser Ser Pro Gln Leu Arg Leu Pro His Thr Leu Arg Cys Ala Asn
                155                 160                 165

Ile Thr Ile Ile Glu His Gln Lys Cys Glu Asn Ala Tyr Pro Gly
                170                 175                 180

Asn Ile Thr Asp Thr Met Val Cys Ala Ser Val Gln Glu Gly Gly
                185                 190                 195

Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asn
                200                 205                 210

Gln Ser Leu Gln Gly Ile Ile Ser Trp Gly Gln Asp Pro Cys Ala
                215                 220                 225
```

```
Ile Thr Arg Lys Pro Gly Val Tyr Thr Lys Val Cys Lys Tyr Val
            230                 235                 240

Asp Trp Ile Gln Glu Thr Met Lys Asn Asn
            245                 250
```

<210> 209
<211> 1485
<212> DNA
<213> Homosapiens

<400> 209

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tcgccatgtc gggcgagctc agcaacaggt tccaaggagg gaaggcgttc   150

ggcttgctca agcccggca ggagaggagg ctggccgaga tcaaccggga   200

gtttctgtgt gaccagaagt acagtgatga agagaacctt ccagaaaagc   250

tcacagcctt caaagagaag tacatggagt ttgacctgaa·caatgaaggc   300

gagattgacc tgatgtcttt aaagaggatg atggagaagc ttggtgtccc   350

caagacccac ctggagatga agaagatgat ctcagaggtg acaggagggg   400

tcagtgacac tatatcctac cgagactttg tgaacatgat gctggggaaa   450

cggtcggctg tcctcaagtt agtcatgatg tttgaaggaa aagccaacga   500

gagcagcccc aagccagttg ccccccctcc agagagagac attgctagcc   550

tgccctgagg accccgcctg gactccccag ccttcccacc ccatacctcc   600

ctcccgatct tgctgccctt cttgacacac tgtgatctct ctctctctca   650

tttgtttggt cattgagggt ttgtttgtgt tttcatcaat gtctttgtaa   700

agcacaaatt atctgcctta aaggggctct gggtcgggga atcctgagcc   750

ttgggtcccc tccctctctt cttccctcct tccccgctcc ctgtgcagaa   800

gggctgatat caaaccaaaa actagagggg gcagggccag ggcagggagg   850

cttccagcct gtgttcccct cacttggagg aaccagcact ctccatcctt   900

tcagaaagtc tccaagccaa gttcaggctc actgacctgg ctctgacgag   950

gaccccaggc cactctgaga agaccttgga gtagggacaa ggctgcaggg  1000

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acccaggaca cagccactcg gggccccgct gccccagctg atccccactc  1100

attccacacc tcttctcatc ctcagtgatg tgaaggtggg aaggaaagga  1150

gcttggcatt gggagccctt caagaaggta ccagaaggaa ccctccagtc  1200

ctgctctctg gccacacctg tgcaggcagc tgagaggcag cgtgcagccc  1250

tactgtccct tactggggca gcagagggct cggaggcag aagtgaggcc  1300
```

```
tggggtttgg ggggaaaggt cagctcagtg ctgttccacc ttttagggag 1350

gatactgagg ggaccaggat gggagaatga ggagtaaaat gctcacggca 1400

aagtcagcag cactggtaag ccaagactga gaaatacaag gttgcttgtc 1450

tgaccccaat ctgcttgaaa aaaaaaaaaa aaaaa 1485
```

```
<210> 210
<211> 150
<212> PRT
<213> Homosapiens

<400> 210
 Met Ser Gly Glu Leu Ser Asn Arg Phe Gln Gly Gly Lys Ala Phe
  1               5                  10                  15

 Gly Leu Leu Lys Ala Arg Gln Glu Arg Arg Leu Ala Glu Ile Asn
                 20                  25                  30

 Arg Glu Phe Leu Cys Asp Gln Lys Tyr Ser Asp Glu Glu Asn Leu
                 35                  40                  45

 Pro Glu Lys Leu Thr Ala Phe Lys Glu Lys Tyr Met Glu Phe Asp
                 50                  55                  60

 Leu Asn Asn Glu Gly Glu Ile Asp Leu Met Ser Leu Lys Arg Met
                 65                  70                  75

 Met Glu Lys Leu Gly Val Pro Lys Thr His Leu Glu Met Lys Lys
                 80                  85                  90

 Met Ile Ser Glu Val Thr Gly Gly Val Ser Asp Thr Ile Ser Tyr
                 95                  100                 105

 Arg Asp Phe Val Asn Met Met Leu Gly Lys Arg Ser Ala Val Leu
                 110                 115                 120

 Lys Leu Val Met Met Phe Glu Gly Lys Ala Asn Glu Ser Ser Pro
                 125                 130                 135

 Lys Pro Val Gly Pro Pro Pro Glu Arg Asp Ile Ala Ser Leu Pro
                 140                 145                 150
```

```
<210> 211
<211> 636
<212> DNA
<213> Homosapiens

<400> 211
 ctgggatcag ccactgcagc tccctgagca ctctctacag agacgcggac 50

 cccagacatg aggaggctcc tcctggtcac cagcctggtg gttgtgctgc 100

 tgtgggaggc aggtgcagtc ccagcaccca aggtccctat caagatgcaa 150

 gtcaaacact ggccctcaga gcaggaccca gagaaggcct ggggcgcccg 200

 tgtggtggag cctccggaga aggacgacca gctggtggtg ctgttccctg 250

 tccagaagcc gaaactcttg accaccgagg agaagccacg aggtcagggc 300

 aggggcccca tccttccagg caccaaggcc tggatggaga ccgaggacac 350
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```
cctgggccgt gtcctgagtc ccgagcccga ccatgacagc ctgtaccacc 400

ctccgcctga ggaggaccag ggcgaggaga ggccccggtt gtgggtgatg 450

ccaaatcacc aggtgctcct gggaccggag gaagaccaag accacatcta 500

ccaccccag tagggctcca ggggccatca ctgccccgc cctgtcccaa 550

ggcccaggct gttgggactg ggaccctccc taccctgccc cagctagaca 600

aataaacccc agcaggcaaa aaaaaaaaa aaaaa 636
```

<210> 212
<211> 151
<212> PRT
<213> Homosapiens

<400> 212

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Met Arg Arg Leu Leu Leu Val Thr Ser Leu Val Val Val Leu Leu
 1               5                  10                  15

Trp Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met
                20                  25                  30

Gln Val Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp
                35                  40                  45

Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val
                50                  55                  60

Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu
                65                  70                  75

Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys
                80                  85                  90

Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro
                95                  100                 105

Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp
                110                 115                 120

Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln
                125                 130                 135

Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro
                140                 145                 150

Gln
```

<210> 213
<211> 2014
<212> DNA
<213> Homosapiens

<400> 213

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caggcagaag cgaacaaaga cccagcaaga gaaggcagag gctaagaccc 50

atcccgtatc tgctctcctg aaataattct ggagtcatgc ctgaaatgcc 100

agaggacatg gagcaggagg aagttaacat ccctaatagg agggttctgg 150
```

```
ttactggtgc cactgggctt cttggcagag ctgtacacaa agaatttcag 200

cagaataatt ggcatgcagt tggctgtggt ttcagaagag caagaccaaa 250

atttgaacag gttaatctgt tggattctaa tgcagttcat cacatcattc 300

atgattttca gccccatgtt atagtacatt gtgcagcaga gagaagacca 350

gatgttgtag aaaatcagcc agatgctgcc tctcaactta atgtggatgc 400

ttctgggaat ttagcaaagg aagcagctgc tgttggagca tttctcatct 450

acattagctc agattatgta tttgatggaa caaatccacc ttacagagag 500

gaagacatac cagctcccct aaatttgtat ggcaaaacaa aattagatgg 550

agaaaaggct gtcctggaga acaatctagg agctgctgtt ttgaggattc 600

ctattctgta tggggaagtt gaaaagctcg aagaaagtgc tgtgactgtt 650

atgtttgata aagtgcagtt cagcaacaag tcagcaaaca tggatcactg 700

gcagcagagg ttccccacac atgtcaaaga tgtggccact gtgtgccggc 750

agctagcaga gaagagaatg ctggatccat caattaaggg aacctttcac 800

tggtctggca atgaacagat gactaagtat gaaatggcat gtgcaattgc 850

agatgccttc aacctcccca gcagtcactt aagacctatt actgacagcc 900

ctgtcctagg agcacaacgt ccgagaaatg ctcagcttga ctgctccaaa 950

ttggagacct tgggcattgg ccaacgaaca ccattcgaa ttggaatcaa 1000

agaatcactt tggcctttcc tcattgacaa gagatggaga caaacggtct 1050

ttcattagtt tatttgtgtt gggttctttt tttttttaaa tgaaaagtat 1100

agtatgtggc actttttaaa gaacaaagga aatagttttg tatgagtact 1150

ttaattgtga ctcttaggat ctttcaggta aatgatgctc ttgcactagt 1200

gaaattgtct aaagaaacta aagggcagtc atgccctgtt tgcagtaatt 1250

tttcttttta tcattttgtt tgtcctggct aaacttggag tttgagtata 1300

gtaaattatg atccttaaat atttgagagt caggatgaag cagatctgct 1350

gtagactttt cagatgaaat tgttcattct cgtaacctcc atattttcag 1400

gatttttgaa gctgttgacc ttttcatgtt gattatttta aattgtgtga 1450

aatagtataa aaatcattgg tgttcattat ttgctttgcc tgagctcaga 1500

tcaaaatgtt tgaagaaagg aactttattt ttgcaagtta cgtacagttt 1550

ttatgcttga gatatttcaa catgttatgt atattggaac ttctacagct 1600

tgatgcctcc tgctttttata gcagtttatg gggagcactt gaaagagcgt 1650

gtgtacatgt atttttttttc taggcaaaca ttgaatgcaa acgtgtattt 1700

ttttaatata aatatataac tgtccttttc atcccatgtt gccgctaagt 1750
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gatatttcat atgtgtggtt atactcataa taatgggcct tgtaagtctt 1800

ttcaccattc atgaataata ataaatatgt actgctggca tgtaatgctt 1850

agttttcttg tatttacttc ttttttttaaa tgtaaggacc aaacttctaa 1900

actaattgtt cttttgttgc tttaattttt aaaaattaca ttcttctgat 1950

gtaacatgtg atacatacaa aagaatatag tttaatatgt attgaaataa 2000

aacacaataa aatt 2014
```

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<210> 214
<211> 323
<212> PRT
<213> Homosapiens

<400> 214
Met Pro Glu Met Pro Glu Asp Met Glu Gln Glu Glu Val Asn Ile
  1               5                  10                  15

Pro Asn Arg Arg Val Leu Val Thr Gly Ala Thr Gly Leu Leu Gly
               20                  25                  30

Arg Ala Val His Lys Glu Phe Gln Gln Asn Asn Trp His Ala Val
               35                  40                  45

Gly Cys Gly Phe Arg Arg Ala Arg Pro Lys Phe Glu Gln Val Asn
               50                  55                  60

Leu Leu Asp Ser Asn Ala Val His His Ile Ile His Asp Phe Gln
               65                  70                  75

Pro His Val Ile Val His Cys Ala Ala Glu Arg Arg Pro Asp Val
               80                  85                  90

Val Glu Asn Gln Pro Asp Ala Ala Ser Gln Leu Asn Val Asp Ala
               95                 100                 105

Ser Gly Asn Leu Ala Lys Glu Ala Ala Ala Val Gly Ala Phe Leu
              110                 115                 120

Ile Tyr Ile Ser Ser Asp Tyr Val Phe Asp Gly Thr Asn Pro Pro
              125                 130                 135

Tyr Arg Glu Glu Asp Ile Pro Ala Pro Leu Asn Leu Tyr Gly Lys
              140                 145                 150

Thr Lys Leu Asp Gly Glu Lys Ala Val Leu Glu Asn Asn Leu Gly
              155                 160                 165

Ala Ala Val Leu Arg Ile Pro Ile Leu Tyr Gly Glu Val Glu Lys
              170                 175                 180

Leu Glu Glu Ser Ala Val Thr Val Met Phe Asp Lys Val Gln Phe
              185                 190                 195

Ser Asn Lys Ser Ala Asn Met Asp His Trp Gln Gln Arg Phe Pro
              200                 205                 210

Thr His Val Lys Asp Val Ala Thr Val Cys Arg Gln Leu Ala Glu
              215                 220                 225
```

```
Lys Arg Met Leu Asp Pro Ser Ile Lys Gly Thr Phe His Trp Ser
            230                 235                 240

Gly Asn Glu Gln Met Thr Lys Tyr Glu Met Ala Cys Ala Ile Ala
            245                 250                 255

Asp Ala Phe Asn Leu Pro Ser Ser His Leu Arg Pro Ile Thr Asp
            260                 265                 270

Ser Pro Val Leu Gly Ala Gln Arg Pro Arg Asn Ala Gln Leu Asp
            275                 280                 285

Cys Ser Lys Leu Glu Thr Leu Gly Ile Gly Gln Arg Thr Pro Phe
            290                 295                 300

Arg Ile Gly Ile Lys Glu Ser Leu Trp Pro Phe Leu Ile Asp Lys
            305                 310                 315

Arg Trp Arg Gln Thr Val Phe His
            320
```

<210> 215
<211> 2065
<212> DNA
<213> Homosapiens

<400> 215

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gtgaatgtga gggtttgatg actttcagat gtctaggaac cagagtgggt 50

gcaggggccc caggcagggc tgattcttgg cggaggaga gtagggtaaa 100

gggttctgca tgagctcctt aaaggacaaa ggtaacagag ccagcgagag 150

agctcgaggg gagactttga cttcaagcca cagaattggt ggaagtgtgc 200

gcgccgccgc cgccgtcgct cctgcagcgc tgtcgaccta gccgctagca 250

tcttcccgag caccgggatc ccggggtagg aggcgacgcg ggcgagcacc 300

agcgccagcc ggctgcggct gcccacacgg ctcaccatgg gctccgggcg 350

ccgggcgctg tccgcggtgc cggccgtgct gctggtcctc acgctgccgg 400

ggctgcccgt ctgggcacag aacgacacgg agcccatcgt gctggagggc 450

aagtgtctgg tggtgtgcga ctcgaacccg gccacggact ccaagggctc 500

ctcttcctcc ccgctgggga tatcggtccg ggcggccaac tccaaggtcg 550

ccttctcggc ggtgcggagc accaaccacg agccatccga gatgagcaac 600

aagacgcgca tcatttactt cgatcagatc ctggtgaatg tgggtaattt 650

tttcacattg gagtctgtct ttgtagcacc aagaaaagga atttacagtt 700

tcagttttca cgtgattaaa gtctaccaga gccaaactat ccaggttaac 750

ttgatgttaa atggaaaacc agtaatatct gcctttgcgg gggacaaaga 800

tgttactcgt gaagctgcca cgaatggtgt cctgctctac ctagataaag 850

aggataaggt ttacctaaaa ctggagaaag gtaatttggt tggaggctgg 900
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cagtattcca cgttttctgg ctttctggtg ttccccctat aggattcaat 950

ttctccatga tgttcatcca ggtgagggat gacccactcc tgagttattg 1000

gaagatcatt ttttcatcat tggattgatg tctttattg gtttctcatg 1050

ggtggatatg gattctaagg attctagcct gtctgaacca atacaaaatt 1100

tcacagatta tttgtgtgtg tctgtttcag tatatttgga ttgggactct 1150

aagcagataa tacctatgct taaatgtaac agtcaaaagc tgtctgcaag 1200

acttattctg aatttcattt cctgggatta ctgaattagt tacagatgtg 1250

gaattttatt tgtttagttt taaaagactg gcaaccaggt ctaaggatta 1300

gaaaactcta aagttctgac ttcaatcaac ggttagtgtg atactgccaa 1350

agaactgtat actgtgttaa tatattgatt atatttgttt ttattccttt 1400

ggaattagtt tgtttggttc ttgtaaaaaa cttggatttt ttttttcagt 1450

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ccaagttata ttttctaaga agaagaatag atcataaatc tgacaaggaa 1650

aaagttgctt acccaaaatc taagtgctca atccctgagc ctcagcaaaa 1700

cagctcccct ccgagggaaa tcttatactt tattgctcaa ctttaattaa 1750

aatgattgat aataaccact ttattaaaaa cctaaggttt tttttttttc 1800

cgtagacatg accactttat taactggtgg tgggatgctg ttgtttctaa 1850

ttatacctat ttttcaaggc ttctgttgta tttgaagtat catctggttt 1900

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ttcaaatatc ccatatctaa atttagtgca atatcttgtc ttttgtatag 2000

gtcatatgaa ttcataaaat tatttatgtc tgttatagaa taaagattaa 2050

tatatgttaa aaaaa 2065
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<210> 216
<211> 201
<212> PRT
<213> Homosapiens

<400> 216

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Met Gly Ser Gly Arg Arg Ala Leu Ser Ala Val Pro Ala Val Leu
 1               5                  10                  15

Leu Val Leu Thr Leu Pro Gly Leu Pro Val Trp Ala Gln Asn Asp
                20                  25                  30

Thr Glu Pro Ile Val Leu Glu Gly Lys Cys Leu Val Val Cys Asp
                    35                  40                  45
```

```
Ser Asn Pro Ala Thr Asp Ser Lys Gly Ser Ser Ser Ser Pro Leu
            50              55                      60

Gly Ile Ser Val Arg Ala Ala Asn Ser Lys Val Ala Phe Ser Ala
            65              70                      75

Val Arg Ser Thr Asn His Glu Pro Ser Glu Met Ser Asn Lys Thr
            80              85                      90

Arg Ile Ile Tyr Phe Asp Gln Ile Leu Val Asn Val Gly Asn Phe
            95             100                     105

Phe Thr Leu Glu Ser Val Phe Val Ala Pro Arg Lys Gly Ile Tyr
           110             115                     120

Ser Phe Ser Phe His Val Ile Lys Val Tyr Gln Ser Gln Thr Ile
           125             130                     135

Gln Val Asn Leu Met Leu Asn Gly Lys Pro Val Ile Ser Ala Phe
           140             145                     150

Ala Gly Asp Lys Asp Val Thr Arg Glu Ala Ala Thr Asn Gly Val
           155             160                     165

Leu Leu Tyr Leu Asp Lys Glu Asp Lys Val Tyr Leu Lys Leu Glu
           170             175                     180

Lys Gly Asn Leu Val Gly Gly Trp Gln Tyr Ser Thr Phe Ser Gly
           185             190                     195

Phe Leu Val Phe Pro Leu
           200
```

<210> 217
<211> 3939
<212> DNA
<213> Homosapiens

<400> 217

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atgttcgctc tgggcttgcc cttcttggtg ctcttggtgg cctcggtcga 100

gagccatctg ggggttctgg ggcccaagaa cgtctcgcag aaagacgccg 150

agtttgagcg cacctacgtg gacgaggtca acagcgagct ggtcaacatc 200

tacaccttca accatactgt gacccgcaac aggacagagg gcgtgcgtgt 250

gtctgtgaac gtcctgaaca agcagaaggg ggcgccgttg ctgtttgtgg 300

tccgccagaa ggaggctgtg gtgtccttcc aggtgcccct aatcctgcga 350

gggatgtttc agcgcaagta cctctaccaa aaagtggaac gaaccctgtg 400

tcagcccccc accaagaatg agtcggagat tcagttcttc tacgtggatg 450

tgtccaccct gtcaccagtc aacaccacat accagctccg ggtcagccgc 500

atggacgatt ttgtgctcag gactggggag cagttcagct tcaataccac 550

agcagcacag ccccagtact tcaagtatga gttccctgaa ggcgtggact 600
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cggtaattgt caaggtgacc tccaacaagg ccttcccctg ctcagtcatc 650

tccattcagg atgtgctgtg tcctgtctat gacctggaca acaacgtagc 700

cttcatcggc atgtaccaga cgatgaccaa gaaggcggcc atcaccgtac 750

agcgcaaaga cttccccagc aacagctttt atgtggtggt ggtggtgaag 800

accgaagacc aagcctgcgg gggctccctg cctttctacc ccttcgcaga 850

agatgaaccg gtcgatcaag ggcaccgcca gaaaaccctg tcagtgctgg 900

tgtctcaagc agtcacgtct gaggcatacg tcagtgggat gctctttttgc 950

ctgggtatat ttctctcctt ttacctgctg accgtcctcc tggcctgctg 1000

ggagaactgg aggcagaaga agaagaccct gctggtggcc attgaccgag 1050

cctgcccaga aagcggtcac cctcgagtcc tggctgattc ttttcctggc 1100

agttcccctt atgagggtta caactatggc tcctttgaga atgtttctgg 1150

atctaccgat ggtctggttg acagcgctgg cactggggac ctctcttacg 1200

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tccatgagct ctgtggagga ggatgactac gacacattga ccgacatcga 1300

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tggcacggaa ggacaagcgt gttctgcgga aaaagtacca gatctacttc 1400

tggaacattg ccaccattgc tgtcttctat gcccttcctg tggtgcagct 1450

ggtgatcacc taccagacgg tggtgaatgt cacagggaat caggacatct 1500

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gctgaattca gaggtcacct cttcatccca tcagctccca gactgatgcc 3300

agcaccagga ctggagggag aagcgcctca ccccttccct tccttctttc 3350

caggcccta gtcttgccaa accccagctg gtggcctttc agtgccattg 3400

acactgccca agaatgtcca ggggcaaagg agggatgata cagagttcag 3450

cccgttctgc ctccacagct gtgggcaccc cagtgcctac cttagaaagg 3500

ggcttcagga agggatgtgc tgtttccctc tacgtgccca gtcctagcct 3550

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agttctgtgt tagtcatgca cacacatacc tatgaaacct tggagtttac 3650

aaagaattgc cccagctctg ggcaccctgg ccaccctggt ccttggatcc 3700

ccttcgtccc acctggtcca ccccagatgc tgaggatggg ggagctcagg 3750

cggggcctct gctttgggga tgggaatgtg tttttctccc aaacttgttt 3800
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ttatagctct gcttgaaggg ctgggagatg aggtgggtct ggatctttc 3850

tcagagcgtc tccatgctat ggttgcattt ccgttttcta tgaatgaatt 3900

tgcattcaat aaacaaccag actcaaaaaa aaaaaaaaa 3939

<210> 218
<211> 832
<212> PRT
<213> Homosapiens

<400> 218

```
Met Phe Ala Leu Gly Leu Pro Phe Leu Val Leu Leu Val Ala Ser
 1               5                  10                  15

Val Glu Ser His Leu Gly Val Leu Gly Pro Lys Asn Val Ser Gln
                20                  25                  30

Lys Asp Ala Glu Phe Glu Arg Thr Tyr Val Asp Glu Val Asn Ser
                35                  40                  45

Glu Leu Val Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn
                50                  55                  60

Arg Thr Glu Gly Val Arg Val Ser Val Asn Val Leu Asn Lys Gln
                65                  70                  75

Lys Gly Ala Pro Leu Leu Phe Val Val Arg Gln Lys Glu Ala Val
                80                  85                  90

Val Ser Phe Gln Val Pro Leu Ile Leu Arg Gly Met Phe Gln Arg
                95                  100                 105

Lys Tyr Leu Tyr Gln Lys Val Glu Arg Thr Leu Cys Gln Pro Pro
                110                 115                 120

Thr Lys Asn Glu Ser Glu Ile Gln Phe Phe Tyr Val Asp Val Ser
                125                 130                 135

Thr Leu Ser Pro Val Asn Thr Thr Tyr Gln Leu Arg Val Ser Arg
                140                 145                 150

Met Asp Asp Phe Val Leu Arg Thr Gly Glu Gln Phe Ser Phe Asn
                155                 160                 165

Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr Glu Phe Pro Glu
                170                 175                 180

Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn Lys Ala Phe
                185                 190                 195

Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro Val Tyr
                200                 205                 210

Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr Met
                215                 220                 225

Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
                230                 235                 240

Asn Ser Phe Tyr Val Val Val Val Lys Thr Glu Asp Gln Ala
                245                 250                 255
```

266

```
Cys Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro
              260             265                     270

Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser
              275             280                     285

Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys
              290             295                     300

Leu Gly Ile Phe Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala
              305             310                     315

Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala
              320             325                     330

Ile Asp Arg Ala Cys Pro Glu Ser Gly His Pro Arg Val Leu Ala
              335             340                     345

Asp Ser Phe Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly
              350             355                     360

Ser Phe Glu Asn Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser
              365             370                     375

Ala Gly Thr Gly Asp Leu Ser Tyr Gly Tyr Gln Gly Arg Ser Phe
              380             385                     390

Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val
              395             400                     405

Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys
              410             415                     420

Asn Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala
              425             430                     435

Arg Lys Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe
              440             445                     450

Trp Asn Ile Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val
              455             460                     465

Gln Leu Val Ile Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn
              470             475                     480

Gln Asp Ile Cys Tyr Tyr Asn Phe Leu Cys Ala His Pro Leu Gly
              485             490                     495

Asn Leu Ser Ala Phe Asn Asn Ile Leu Ser Asn Leu Gly Tyr Ile
              500             505                     510

Leu Leu Gly Leu Leu Phe Leu Leu Ile Ile Leu Gln Arg Glu Ile
              515             520                     525

Asn His Asn Arg Ala Leu Leu Arg Asn Asp Leu Cys Ala Leu Glu
              530             535                     540

Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr Ala Met Gly Thr
              545             550                     555

Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr His Val Cys
              560             565                     570
```

267

```
Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met Tyr Met
            575             580             585

Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His Pro
            590             595             600

Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile
            605             610             615

Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn
            620             625             630

Thr Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr
            635             640             645

Leu Leu Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu
            650             655             660

Asp Ser Gly Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp
            665             670             675

Cys Ile Arg Gln Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val
            680             685             690

Leu Leu Val Met Gly Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr
            695             700             705

Gly Leu Ile Met Arg Pro Asn Asp Phe Ala Ser Tyr Leu Leu Ala
            710             715             720

Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala Phe Tyr Ile Ile
            725             730             735

Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile Pro Leu Leu
            740             745             750

Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu Phe Phe
            755             760             765

Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu Ser
            770             775             780

Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp
            785             790             795

His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser
            800             805             810

Phe Leu Val Leu Leu Thr Leu Asp Asp Asp Leu Asp Thr Val Gln
            815             820             825

Arg Asp Lys Ile Tyr Val Phe
            830
```

<210> 219
<211> 1073
<212> DNA
<213> Homosapiens

<400> 219
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aatttttcac cagagtaaac ttgagaaacc aactggacct tgagtattgt 50

acattttgcc tcgtggaccc aaaggtagca atctgaaaca tgaggagtac 100
```

268

```
gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

aacctgcttt gggactccct cccacaaaac tggctccgga tcagggaaca 200

ctaccaaacc aacagcagtc aaatcaggtc tttccttctt taagtctgat 250

accattaaca cagatgctca cactggggcc agatctgcat ctgttaaatc 300

ctgctgcagg aatgacacct ggtacccaga cccacccatt gaccctggga 350

gggttgaatg tacaacagca actgcaccca catgtgttac caatttttgt 400

cacacaactt ggagcccagg gcactatcct aagctcagag gaattgccac 450

aaatcttcac gagcctcatc atccattcct gttcccgggg aggcatcctg 500

cccaccagtc aggcaggggc taatccagat gtccaggatg gaagccttcc 550

agcaggagga gcaggtgtaa atcctgccac ccaggaacc ccagcaggcc 600

gcctcccaac tcccagtggc acagatgacg actttgcagt gaccacccct 650

gcaggcatcc aaaggagcac acatgccatc gaggaagcca ccacagaatc 700

agcaaatgga attcagtaag ctgtttcaaa ttttttcaac taagctgcct 750

cgaatttggt gatacatgtg aatctttatc attgattata ttatggaata 800

gattgagaca cattggatag tcttagaaga aattaattct taatttacct 850

gaaaatattc ttgaaatttc agaaaatatg ttctatgtag agaatcccaa 900

cttttaaaaa caataattca atggataaat ctgtctttga aatataacat 950

tatgctgcct ggatgatatg catattaaaa catatttgga aaactggaaa 1000

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1050

aaaaaaaaaa aaaaaaaaaa aaa 1073
```

<210> 220
<211> 209
<212> PRT
<213> Homosapiens

<400> 220
```
Met Arg Ser Thr Ile Leu Leu Phe Cys Leu Leu Gly Ser Thr Arg
  1               5                   10                  15

Ser Leu Pro Gln Leu Lys Pro Ala Leu Gly Leu Pro Pro Thr Lys
                 20                  25                  30

Leu Ala Pro Asp Gln Gly Thr Leu Pro Asn Gln Gln Gln Ser Asn
                 35                  40                  45

Gln Val Phe Pro Ser Leu Ser Leu Ile Pro Leu Thr Gln Met Leu
                 50                  55                  60

Thr Leu Gly Pro Asp Leu His Leu Leu Asn Pro Ala Ala Gly Met
             65                  70                  75

Thr Pro Gly Thr Gln Thr His Pro Leu Thr Leu Gly Gly Leu Asn
                 80                  85                  90
```

```
Val Gln Gln Gln Leu His Pro His Val Leu Pro Ile Phe Val Thr
                95                100                105

Gln Leu Gly Ala Gln Gly Thr Ile Leu Ser Ser Glu Glu Leu Pro
               110                115                120

Gln Ile Phe Thr Ser Leu Ile Ile His Ser Leu Phe Pro Gly Gly
               125                130                135

Ile Leu Pro Thr Ser Gln Ala Gly Ala Asn Pro Asp Val Gln Asp
               140                145                150

Gly Ser Leu Pro Ala Gly Gly Ala Gly Val Asn Pro Ala Thr Gln
               155                160                165

Gly Thr Pro Ala Gly Arg Leu Pro Thr Pro Ser Gly Thr Asp Asp
               170                175                180

Asp Phe Ala Val Thr Thr Pro Ala Gly Ile Gln Arg Ser Thr His
               185                190                195

Ala Ile Glu Glu Ala Thr Thr Glu Ser Ala Asn Gly Ile Gln
               200                205
```

<210> 221
<211> 2668
<212> DNA
<213> Homosapiens

<400> 221

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gactttgctt gaatgtttac attttctgct cgctgtccta catatcacaa 50

tatagtgttc acgttttgtt aaaactttgg ggtgtcagga gttgagcttg 100

ctcagcaagc cagcatggct aggatgagct ttgttatagc agcttgccaa 150

ttggtgctgg gcctactaat gacttcatta accgagtctt ccatacagaa 200

tagtgagtgt ccacaacttt gcgtatgtga aattcgtccc tggtttaccc 250

cacagtcaac ttacagagaa gccaccactg ttgattgcaa tgacctccgc 300

ttaacaagga ttcccagtaa cctctctagt gacacacaag tgcttctctt 350

acagagcaat aacatcgcga agactgtgga tgagctgcag cagcttttca 400

acttgactga actagatttc tcccaaaaca actttactaa cattaaggag 450

gtcgggctgg caaacctaac ccagctcaca acgctgcatt ggaggaaaaa 500

tcagattacc gagatgactg attactgtct acaagacctc agcaaccttc 550

aagaactcta catcaaccac aaccaaatta gcactatttc tgctcatgct 600

tttgcaggct taaaaaatct attaaggctc cacctgaact ccaacaaatt 650

gaaagttatt gatagtcgct ggtttgattc tacacccaac ctggaaattc 700

tcatgatcgg agaaaaccct gtgattggaa ttctggatat gaacttcaaa 750

cccctcgcaa atttgagaag cttagttttg gcaggaatgt atctcactga 800

tattcctgga aatgctttgg tgggtctgga tagccttgag agcctgtctt 850
```

270

```
tttatgataa caaactggtt aaagtccctc aacttgccct gcaaaaagtt 900

ccaaatttga aattcttaga cctcaacaaa aaccccattc acaaaatcca 950

agaaggggac ttcaaaaata tgcttcggtt aaaagaactg ggaatcaaca 1000

atatgggcga gctcgtttct gtcgaccgct atgccctgga taacttgcct 1050

gaactcacaa agctggaagc caccaataac cctaaactct cttacatcca 1100

ccgcttggct ttccgaagtg tccctgctct ggaaagcttg atgctgaaca 1150

acaatgcctt gaatgccatt taccaaaaga cagtcgaatc cctccccaat 1200

ctgcgtgaga tcagtatcca tagcaatccc ctcaggtgtg actgtgtgat 1250

ccactggatt aactccaaca aaaccaacat ccgcttcatg gagcccctgt 1300

ccatgttctg tgccatgccg cccgaatata aagggcacca ggtgaaggaa 1350

gttttaatcc aggattcgag tgaacagtgc ctcccaatga tatctcacga 1400

cagcttccca aatcgtttaa acgtggatat cggcacgacg gttttcctag 1450

actgtcgagc catggctgag ccagaacctg aaatttactg ggtcactccc 1500

attggaaata agataactgt ggaaaccctt tcagataaat acaagctaag 1550

tagcgaaggt accttggaaa tatctaacat acaaattgaa gactcaggaa 1600

gatacacatg tgttgcccag aatgtccaag gggcagacac tcgggtggca 1650

acaattaagg ttaacgggac ccttctggat ggtacccagg tgctaaaaat 1700

atacgtcaag cagacagaat cccattccat cttagtgtcc tggaaagtta 1750

attccaatgt catgacgtca aacttaaaat ggtcgtctgc caccatgaag 1800

attgataacc ctcacataac atatactgcc agggtcccag tcgatgtcca 1850

tgaatacaac ctaacgcatc tgcagccttc cacagattat gaagtgtgtc 1900

tcacagtgtc caatattcat cagcagactc aaaagtcatg cgtaaatgtc 1950

acaaccaaaa atgccgcctt cgcagtggac atctctgatc aagaaaccag 2000

tacagccctt gctgcagtaa tggggtctat gtttgccgtc attagccttg 2050

cgtccattgc tgtgtacttt gccaaaagat ttaagagaaa aaactaccac 2100

cactcattaa aaaagtatat gcaaaaaacc tcttcaatcc cactaaatga 2150

gctgtaccca ccactcatta acctctggga aggtgacagc gagaaagaca 2200

aagatggttc tgcagacacc aagccaaccc aggtcgacac atccagaagc 2250

tattacatgt ggtaactcag aggatatttt gcttctggta gtaaggagca 2300

caaagacgtt tttgctttat tctgcaaaag tgaacaagtt gaagactttt 2350

gtatttttga ctttgctagt ttgtggcaga gtggagagga cgggtggata 2400

tttcaaattt ttttagtata gcgtatcgca agggtttgac acggctgcca 2450
```

```
gcgactctag gcttccagtc tgtgtttggt ttttattctt atcattatta 2500

tgattgttat tatattatta ttttatttta gttgttgtgc taaactcaat 2550

aatgctgttc taactacagt gctcaataaa atgattaatg acaggaaaaa 2600

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2650

aaaaaaaaaa aaaaaaaa 2668
```

<210> 222
<211> 716
<212> PRT
<213> Homosapiens

<400> 222

```
Met Ala Arg Met Ser Phe Val Ile Ala Ala Cys Gln Leu Val Leu
 1               5                  10                  15

Gly Leu Leu Met Thr Ser Leu Thr Glu Ser Ser Ile Gln Asn Ser
                20                  25                  30

Glu Cys Pro Gln Leu Cys Val Cys Glu Ile Arg Pro Trp Phe Thr
                35                  40                  45

Pro Gln Ser Thr Tyr Arg Glu Ala Thr Thr Val Asp Cys Asn Asp
                50                  55                  60

Leu Arg Leu Thr Arg Ile Pro Ser Asn Leu Ser Ser Asp Thr Gln
                65                  70                  75

Val Leu Leu Leu Gln Ser Asn Asn Ile Ala Lys Thr Val Asp Glu
                80                  85                  90

Leu Gln Gln Leu Phe Asn Leu Thr Glu Leu Asp Phe Ser Gln Asn
                95                  100                 105

Asn Phe Thr Asn Ile Lys Glu Val Gly Leu Ala Asn Leu Thr Gln
                110                 115                 120

Leu Thr Thr Leu His Leu Glu Glu Asn Gln Ile Thr Glu Met Thr
                125                 130                 135

Asp Tyr Cys Leu Gln Asp Leu Ser Asn Leu Gln Glu Leu Tyr Ile
                140                 145                 150

Asn His Asn Gln Ile Ser Thr Ile Ser Ala His Ala Phe Ala Gly
                155                 160                 165

Leu Lys Asn Leu Leu Arg Leu His Leu Asn Ser Asn Lys Leu Lys
                170                 175                 180

Val Ile Asp Ser Arg Trp Phe Asp Ser Thr Pro Asn Leu Glu Ile
                185                 190                 195

Leu Met Ile Gly Glu Asn Pro Val Ile Gly Ile Leu Asp Met Asn
                200                 205                 210

Phe Lys Pro Leu Ala Asn Leu Arg Ser Leu Val Leu Ala Gly Met
                215                 220                 225

Tyr Leu Thr Asp Ile Pro Gly Asn Ala Leu Val Gly Leu Asp Ser
                230                 235                 240
```

272

```
Leu Glu Ser Leu Ser Phe Tyr Asp Asn Lys Leu Val Lys Val Pro
                245             250             255

Gln Leu Ala Leu Gln Lys Val Pro Asn Leu Lys Phe Leu Asp Leu
                260             265             270

Asn Lys Asn Pro Ile His Lys Ile Gln Glu Gly Asp Phe Lys Asn
                275             280             285

Met Leu Arg Leu Lys Glu Leu Gly Ile Asn Asn Met Gly Glu Leu
                290             295             300

Val Ser Val Asp Arg Tyr Ala Leu Asp Asn Leu Pro Glu Leu Thr
                305             310             315

Lys Leu Glu Ala Thr Asn Asn Pro Lys Leu Ser Tyr Ile His Arg
                320             325             330

Leu Ala Phe Arg Ser Val Pro Ala Leu Glu Ser Leu Met Leu Asn
                335             340             345

Asn Asn Ala Leu Asn Ala Ile Tyr Gln Lys Thr Val Glu Ser Leu
                350             355             360

Pro Asn Leu Arg Glu Ile Ser Ile His Ser Asn Pro Leu Arg Cys
                365             370             375

Asp Cys Val Ile His Trp Ile Asn Ser Asn Lys Thr Asn Ile Arg
                380             385             390

Phe Met Glu Pro Leu Ser Met Phe Cys Ala Met Pro Pro Glu Tyr
                395             400             405

Lys Gly His Gln Val Lys Glu Val Leu Ile Gln Asp Ser Ser Glu
                410             415             420

Gln Cys Leu Pro Met Ile Ser His Asp Ser Phe Pro Asn Arg Leu
                425             430             435

Asn Val Asp Ile Gly Thr Thr Val Phe Leu Asp Cys Arg Ala Met
                440             445             450

Ala Glu Pro Glu Pro Glu Ile Tyr Trp Val Thr Pro Ile Gly Asn
                455             460             465

Lys Ile Thr Val Glu Thr Leu Ser Asp Lys Tyr Lys Leu Ser Ser
                470             475             480

Glu Gly Thr Leu Glu Ile Ser Asn Ile Gln Ile Glu Asp Ser Gly
                485             490             495

Arg Tyr Thr Cys Val Ala Gln Asn Val Gln Gly Ala Asp Thr Arg
                500             505             510

Val Ala Thr Ile Lys Val Asn Gly Thr Leu Leu Asp Gly Thr Gln
                515             520             525

Val Leu Lys Ile Tyr Val Lys Gln Thr Glu Ser His Ser Ile Leu
                530             535             540

Val Ser Trp Lys Val Asn Ser Asn Val Met Thr Ser Asn Leu Lys
                545             550             555
```

273

```
Trp Ser Ser Ala Thr Met Lys Ile Asp Asn Pro His Ile Thr Tyr
             560             565             570

Thr Ala Arg Val Pro Val Asp Val His Glu Tyr Asn Leu Thr His
             575             580             585

Leu Gln Pro Ser Thr Asp Tyr Glu Val Cys Leu Thr Val Ser Asn
             590             595             600

Ile His Gln Gln Thr Gln Lys Ser Cys Val Asn Val Thr Thr Lys
             605             610             615

Asn Ala Ala Phe Ala Val Asp Ile Ser Asp Gln Glu Thr Ser Thr
             620             625             630

Ala Leu Ala Ala Val Met Gly Ser Met Phe Ala Val Ile Ser Leu
             635             640             645

Ala Ser Ile Ala Val Tyr Phe Ala Lys Arg Phe Lys Arg Lys Asn
             650             655             660

Tyr His His Ser Leu Lys Lys Tyr Met Gln Lys Thr Ser Ser Ile
             665             670             675

Pro Leu Asn Glu Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Gly
             680             685             690

Asp Ser Glu Lys Asp Lys Asp Gly Ser Ala Asp Thr Lys Pro Thr
             695             700             705

Gln Val Asp Thr Ser Arg Ser Tyr Tyr Met Trp
             710             715
```

<210> 223
<211> 1743
<212> DNA
<213> Homosapiens

<400> 223

```
caaccatgca aggacagggc aggagaagag gaacctgcaa agacatattt 50

tgttccaaaa tggcatctta cctttatgga gtactctttg ctgttggcct 100

ctgtgctcca atctactgtg tgtccccggc caatgccccc agtgcatacc 150

cccgcccttc ctccacaaag agcacccctg cctcacaggt gtattccctc 200

aacaccgact ttgccttccg cctataccgc aggctggttt tggagacccc 250

gagtcagaac atcttcttct cccctgtgag tgtctccact tccctggcca 300

tgctctccct tggggcccac tcagtcacca gacccagat tctccagggc 350

ctgggcttca acctcacaca cacaccagag tctgccatcc accagggctt 400

ccagcacctg gttcactcac tgactgttcc cagcaaagac ctgaccttga 450

agatgggaag tgccctcttc gtcaagaagg agctgcagct gcaggcaaat 500

ttcttgggca atgtcaagag gctgtatgaa gcagaagtct tttctacaga 550

tttctccaac ccctccattg cccaggcgag gatcaacagc catgtgaaaa 600
```

274

agaagaccca agggaaggtt gtagacataa tccaaggcct tgaccttctg 650

acggccatgg ttctggtgaa tcacattttc tttaaagcca agtgggagaa 700

gccctttcac cttgaatata caagaaagaa cttcccattc ctggtgggcg 750

agcaggtcac tgtgcaagtc cccatgatgc accagaaaga gcagttcgct 800

tttggggtgg atacagagct gaactgcttt gtgctgcaga tggattacaa 850

gggagatgcc gtggccttct ttgtcctccc tagcaagggc aagatgaggc 900

aactggaaca ggccttgtca gccagaacac tgataaagtg gagccactca 950

ctccagaaaa ggtggataga ggtgttcatc cccagatttt ccatttctgc 1000

ctcctacaat ctggaaacca tcctcccgaa gatgggcatc caaaatgcct 1050

ttgacaaaaa tgctgatttt tctggaattg caaagagaga ctccctgcag 1100

gtttctaaag caacccacaa ggctgtgctg gatgtcagtg aagagggcac 1150

tgaggccaca gcagctacca ccaccaagtt catagtccga tcgaaggatg 1200

gtccctctta cttcactgtc tccttcaata ggaccttcct gatgatgatt 1250

acaaataaag ccacagacgg tattctcttt ctagggaaag tggaaaatcc 1300

cactaaatcc taggtgggaa atggcctgtt aactgatggc acattgctaa 1350

tgcacaagaa ataacaaacc catccctct ttctgttctg agggtgcatt 1400

tgaccccagt ggagctggat cgctggcag ggatgccact tccaaggctc 1450

aatcaccaaa ccatcaacag gaccccagt cacaagccaa cacccattaa 1500

ccccagtcag tgccttttc cacaaattct cccaggtaac tagcttcatg 1550

ggatgttgct gggttaccat atttccattc cttggggctc ccaggaatgg 1600

aaatacgcca acccaggtta ggcacctcta ttgcagaatt acaataacac 1650

attcaataaa actaaatat gaattcaaaa aaaaaaaaaa aaaaaaaaaa 1700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1743

<210> 224
<211> 417
<212> PRT
<213> Homosapiens

<400> 224
Met Ala Ser Tyr Leu Tyr Gly Val Leu Phe Ala Val Gly Leu Cys
1               5                   10                  15

Ala Pro Ile Tyr Cys Val Ser Pro Ala Asn Ala Pro Ser Ala Tyr
                20                  25                  30

Pro Arg Pro Ser Ser Thr Lys Ser Thr Pro Ala Ser Gln Val Tyr
                35                  40                  45

Ser Leu Asn Thr Asp Phe Ala Phe Arg Leu Tyr Arg Arg Leu Val
                50                  55                  60

275

```
Leu Glu Thr Pro Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Val
                65                  70                      75

Ser Thr Ser Leu Ala Met Leu Ser Leu Gly Ala His Ser Val Thr
                80                  85                      90

Lys Thr Gln Ile Leu Gln Gly Leu Gly Phe Asn Leu Thr His Thr
                95                 100                     105

Pro Glu Ser Ala Ile His Gln Gly Phe Gln His Leu Val His Ser
               110                 115                     120

Leu Thr Val Pro Ser Lys Asp Leu Thr Leu Lys Met Gly Ser Ala
               125                 130                     135

Leu Phe Val Lys Lys Glu Leu Gln Leu Gln Ala Asn Phe Leu Gly
               140                 145                     150

Asn Val Lys Arg Leu Tyr Glu Ala Glu Val Phe Ser Thr Asp Phe
               155                 160                     165

Ser Asn Pro Ser Ile Ala Gln Ala Arg Ile Asn Ser His Val Lys
               170                 175                     180

Lys Lys Thr Gln Gly Lys Val Val Asp Ile Ile Gln Gly Leu Asp
               185                 190                     195

Leu Leu Thr Ala Met Val Leu Val Asn His Ile Phe Phe Lys Ala
               200                 205                     210

Lys Trp Glu Lys Pro Phe His Leu Glu Tyr Thr Arg Lys Asn Phe
               215                 220                     225

Pro Phe Leu Val Gly Glu Gln Val Thr Val Gln Val Pro Met Met
               230                 235                     240

His Gln Lys Glu Gln Phe Ala Phe Gly Val Asp Thr Glu Leu Asn
               245                 250                     255

Cys Phe Val Leu Gln Met Asp Tyr Lys Gly Asp Ala Val Ala Phe
               260                 265                     270

Phe Val Leu Pro Ser Lys Gly Lys Met Arg Gln Leu Glu Gln Ala
               275                 280                     285

Leu Ser Ala Arg Thr Leu Ile Lys Trp Ser His Ser Leu Gln Lys
               290                 295                     300

Arg Trp Ile Glu Val Phe Ile Pro Arg Phe Ser Ile Ser Ala Ser
               305                 310                     315

Tyr Asn Leu Glu Thr Ile Leu Pro Lys Met Gly Ile Gln Asn Ala
               320                 325                     330

Phe Asp Lys Asn Ala Asp Phe Ser Gly Ile Ala Lys Arg Asp Ser
               335                 340                     345

Leu Gln Val Ser Lys Ala Thr His Lys Ala Val Leu Asp Val Ser
               350                 355                     360

Glu Glu Gly Thr Glu Ala Thr Ala Ala Thr Thr Thr Lys Phe Ile
               365                 370                     375
```

276

```
Val Arg Ser Lys Asp Gly Pro Ser Tyr Phe Thr Val Ser Phe Asn
            380             385             390

Arg Thr Phe Leu Met Met Ile Thr Asn Lys Ala Thr Asp Gly Ile
            395             400             405

Leu Phe Leu Gly Lys Val Glu Asn Pro Thr Lys Ser
            410             415
```

<210> 225
<211> 957
<212> DNA
<213> Homosapiens

<400> 225

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ttcccgacct tcccagcaat atgcatcttg cacgtctggt cggctcctgc 100

tccctccttc tgctactggg ggccctgtct ggatgggcgg ccagcgatga 150

ccccattgag aaggtcattg aagggatcaa ccgagggctg agcaatgcag 200

agagagaggt gggcaaggcc ctggatggca tcaacagtgg aatcacgcat 250

gccggaaggg aagtggagaa ggttttcaac ggacttagca acatggggag 300

ccacaccggc aaggagttgg acaaaggcgt ccaggggctc aaccacggca 350

tggacaaggt tgcccatgag atcaaccatg gtattggaca agcaggaaag 400

gaagcagaga agcttggcca tggggtcaac aacgctgctg acaggccggg 450

gaaggaagca gacaaagcgg tccaagggtt ccacactggg gtccaccagg 500

ctgggaagga agcagagaaa cttggccaag gggtcaacca tgctgctgac 550

caggctggaa aggaagtgga gaagcttggc caaggtgccc accatgctgc 600

tggccaggcc gggaaggagc tgcagaatgc tcataatggg gtcaaccaag 650

ccagcaagga ggccaaccag ctgctgaatg caaccatca aagcggatct 700

tccagccatc aaggaggggc cacaaccacg ccgttagcct ctggggcctc 750

agtcaacacg cctttcatca accttcccgc cctgtggagg agcgtcgcca 800

acatcatgcc ctaaactggc atccggcctt gctgggagaa taatgtcgcc 850

gttgtcacat cagctgacat gacctggagg ggttgggggt gggggacagg 900

tttctgaaat ccctgaaggg ggttgtactg ggatttgtga ataaacttga 950

tacacca 957
```

<210> 226
<211> 247
<212> PRT
<213> Homosapiens

<400> 226

```
Met His Leu Ala Arg Leu Val Gly Ser Cys Ser Leu Leu Leu Leu
  1               5                  10                  15
```

277

```
    Leu Gly Ala Leu Ser Gly Trp Ala Ala Ser Asp Asp Pro Ile Glu
                    20                  25                      30

    Lys Val Ile Glu Gly Ile Asn Arg Gly Leu Ser Asn Ala Glu Arg
                    35                  40                      45

    Glu Val Gly Lys Ala Leu Asp Gly Ile Asn Ser Gly Ile Thr His
                    50                  55                      60

    Ala Gly Arg Glu Val Glu Lys Val Phe Asn Gly Leu Ser Asn Met
                    65                  70                      75

    Gly Ser His Thr Gly Lys Glu Leu Asp Lys Gly Val Gln Gly Leu
                    80                  85                      90

    Asn His Gly Met Asp Lys Val Ala His Glu Ile Asn His Gly Ile
                    95                  100                     105

    Gly Gln Ala Gly Lys Glu Ala Glu Lys Leu Gly His Gly Val Asn
                    110                 115                     120

    Asn Ala Ala Gly Gln Ala Gly Lys Glu Ala Asp Lys Ala Val Gln
                    125                 130                     135

    Gly Phe His Thr Gly Val His Gln Ala Gly Lys Glu Ala Glu Lys
                    140                 145                     150

    Leu Gly Gln Gly Val Asn His Ala Ala Asp Gln Ala Gly Lys Glu
                    155                 160                     165

    Val Glu Lys Leu Gly Gln Gly Ala His His Ala Ala Gly Gln Ala
                    170                 175                     180

    Gly Lys Glu Leu Gln Asn Ala His Asn Gly Val Asn Gln Ala Ser
                    185                 190                     195

    Lys Glu Ala Asn Gln Leu Leu Asn Gly Asn His Gln Ser Gly Ser
                    200                 205                     210

    Ser Ser His Gln Gly Gly Ala Thr Thr Thr Pro Leu Ala Ser Gly
                    215                 220                     225

    Ala Ser Val Asn Thr Pro Phe Ile Asn Leu Pro Ala Leu Trp Arg
                    230                 235                     240

    Ser Val Ala Asn Ile Met Pro
                    245
```

<210> 227
<211> 904
<212> DNA
<213> Homosapiens

<400> 227
```
 gaagtagagg tgttgtgctg agcggcgctc ggcgaactgt gtggaccgtc 50

 tgctgggact ccggccctgc gtccgctcag ccccgtggcc ccgcgcacct 100

 actgccatgg agacgcggcc tcgtctcggg gccacctgtt tgctgggctt 150

 cagtttcctg ctcctcgtca tctcttctga tggacataat gggcttggaa 200

 agggttttgg agatcatatt cattggagga cactggaaga tgggaagaaa 250
```

```
gaagcagctg ccagtggact gcccctgatg gtgattattc ataaatcctg 300

gtgtggagct tgcaaagctc taaagcccaa atttgcagaa tctacggaaa 350

tttcagaact ctcccataat tttgttatgg taaatcttga ggatgaagag 400

gaacccaaag atgaagattt cagccctgac gggggttata ttccacgaat 450

ccttttctg datcccagtg gcaaggtgca tcctgaaatc atcaatgaga 500

atggaaaccc cagctacaag tatttttatg tcagtgccga gcaagttgtt 550

cagggatga aggaagctca ggaaaggctg acgggtgatg ccttcagaaa 600

gaaacatctt gaagatgaat tgtaacatga atgtgcccct tctttcatca 650

gagttagtgt tctggaagga aagcagcagg gaagggaata ttgaggaatc 700

atctagaaca attaagccga ccaggaaacc tcattcctac ctacactgga 750

aggagcgctc tcactgtgga agagttctgc taacagaagc tggtctgcat 800

gtttgtggat ccagcggaga gtggcagact ttcttctcct tttccctctc 850

acctaaatgt caacttgtca ttgaatgtaa agaatgaaac cttctgacac 900

aaaa 904
```

<210> 228
<211> 172
<212> PRT
<213> Homosapiens

<400> 228

```
Met Glu Thr Arg Pro Arg Leu Gly Ala Thr Cys Leu Leu Gly Phe
  1               5                  10                  15

Ser Phe Leu Leu Leu Val Ile Ser Ser Asp Gly His Asn Gly Leu
                 20                  25                  30

Gly Lys Gly Phe Gly Asp His Ile His Trp Arg Thr Leu Glu Asp
                 35                  40                  45

Gly Lys Lys Glu Ala Ala Ala Ser Gly Leu Pro Leu Met Val Ile
                 50                  55                  60

Ile His Lys Ser Trp Cys Gly Ala Cys Lys Ala Leu Lys Pro Lys
                 65                  70                  75

Phe Ala Glu Ser Thr Glu Ile Ser Glu Leu Ser His Asn Phe Val
                 80                  85                  90

Met Val Asn Leu Glu Asp Glu Glu Glu Pro Lys Asp Glu Asp Phe
                 95                 100                 105

Ser Pro Asp Gly Gly Tyr Ile Pro Arg Ile Leu Phe Leu Asp Pro
                110                 115                 120

Ser Gly Lys Val His Pro Glu Ile Ile Asn Glu Asn Gly Asn Pro
                125                 130                 135

Ser Tyr Lys Tyr Phe Tyr Val Ser Ala Glu Gln Val Val Gln Gly
                140                 145                 150
```

```
Met Lys Glu Ala Gln Glu Arg Leu Thr Gly Asp Ala Phe Arg Lys
              155                 160                 165

Lys His Leu Glu Asp Glu Leu
              170
```

<210> 229
<211> 1942
<212> DNA
<213> Homosapiens

<400> 229

```
cccacgcgtc cgcccacgcg tccgggtgcc actcgcgcgc cggccgcgct 50

ccgggcttct cttttccctc cgacgcgcca cggctgccca gacattccgg 100

ctgccgggtc tggagagctc cccgaacccc tccgcggaga ggagcgaggc 150

ggcgccaggg tggcccccgg ggcgcgcttg gtctcggaga agcggggacg 200

aggccggagg atgagcgact gagggcgacg cgggcactga cgcgagttgg 250

ggccgcgact accggcagct gacagcgcga tgagcgactc cccagagacg 300

ccctagcccg gtgtgcgcgc caggcggagc gcgcaggtgg ggctgggctg 350

ttagtggtcc gccccacgcg ggtcgccggc cggcccagga tgggcgctgg 400

caacccgggc ccgcgcccgc cgctgctacc cctgcgcccg ctgcgagccc 450

ggcgtccggc ccgcgccctg cgctcatgga cggcggctcc cggctggcgg 500

cggcgcgccc ccgggctgtg aatgcgactc gcccctcggc cgcgctcccc 550

gcccgcccgc cgccgggac gtggtagggg atgcccagct ccactgcgat 600

ggcagttggc gcgctctcca gttccctcct ggtcacctgc tgcctgatgg 650

tggctctgtg cagtccgagc atccgctgg agaagctggc ccaggcacca 700

gagcagccgg gccaggagaa gcgtgagcac gccactcggg acggcccggg 750

gcgggtgaac gagctcgggc gcccggcgag ggacgagggc ggcagcggcc 800

gggactggaa gagcaagagc ggccgtgggc tcgccggccg tgagccgtgg 850

agcaagctga agcaggcctg ggtctcccag ggcgggggcg ccaaggccgg 900

ggatctgcag gtccggcccc gcggggacac cccgcaggcg gaagccctgg 950

ccgcagccgc ccaggacgcg attggcccgg aactcgcgcc cacgcccgag 1000

ccacccgagg agtacgtgta cccggactac cgtggcaagg gctgcgtgga 1050

cgagagcggc ttcgtgtacg cgatcgggga gaagttcgcg ccgggcccct 1100

cggcctgccc gtgcctgtgc accgaggagg ggccgctgtg cgcgcagccc 1150

gagtgcccga ggctgcaccc gcgctgcatc cacgtcgaca cgagccagtg 1200

ctgcccgcag tgcaaggaga ggaagaacta ctgcgagttc cggggcaaga 1250

cctatcagac tttggaggag ttcgtggtgt ctccatgcga gaggtgtcgc 1300
```

```
tgtgaagcca acggtgaggt gctatgcaca gtgtcagcgt gtccccagac 1350

ggagtgtgtg gaccctgtgt acgagcctga tcagtgctgt cccatctgca 1400

aaaatggtcc aaactgcttt gcagaaaccg cggtgatccc tgctggcaga 1450

gaagtgaaga ctgacgagtg caccatatgc cactgtactt atgaggaagg 1500

cacatggaga atcgagcggc aggccatgtg cacgagacat gaatgcaggc 1550

aaatgtagac gcttcccaga acacaaactc tgactttttc tagaacattt 1600

tactgatgtg aacattctag atgactctgg gaactatcag tcaaagaaga 1650

cttttgatga ggaataatgg aaaattgttg gtacttttcc ttttcttgat 1700

aacagttact acaacagaag gaaatggata tatttcaaaa catcaacaag 1750

aactttgggc ataaaatcct tctctaaata aatgtgctat tttcacagta 1800

agtacacaaa agtacactat tatatatcaa atgtatttct ataatccctc 1850

cattagagag cttatataag tgttttctat agatgcagat taaaaatgct 1900

gtgttgtcaa ccgtcaaaaa aaaaaaaaa aaaaaaaaa aa 1942
```

```
<210> 230
<211> 325
<212> PRT
<213> Homosapiens

<400> 230
 Met Pro Ser Ser Thr Ala Met Ala Val Gly Ala Leu Ser Ser Ser
  1               5                  10                  15

 Leu Leu Val Thr Cys Cys Leu Met Val Ala Leu Cys Ser Pro Ser
                 20                  25                  30

 Ile Pro Leu Glu Lys Leu Ala Gln Ala Pro Glu Gln Pro Gly Gln
                 35                  40                  45

 Glu Lys Arg Glu His Ala Thr Arg Asp Gly Pro Gly Arg Val Asn
                 50                  55                  60

 Glu Leu Gly Arg Pro Ala Arg Asp Glu Gly Gly Ser Gly Arg Asp
                 65                  70                  75

 Trp Lys Ser Lys Ser Gly Arg Gly Leu Ala Gly Arg Glu Pro Trp
                 80                  85                  90

 Ser Lys Leu Lys Gln Ala Trp Val Ser Gln Gly Gly Gly Ala Lys
                 95                  100                 105

 Ala Gly Asp Leu Gln Val Arg Pro Arg Gly Asp Thr Pro Gln Ala
                 110                 115                 120

 Glu Ala Leu Ala Ala Ala Ala Gln Asp Ala Ile Gly Pro Glu Leu
                 125                 130                 135

 Ala Pro Thr Pro Glu Pro Pro Glu Glu Tyr Val Tyr Pro Asp Tyr
                 140                 145                 150

 Arg Gly Lys Gly Cys Val Asp Glu Ser Gly Phe Val Tyr Ala Ile
```

281

```
                    155                     160                     165
Gly Glu Lys Phe Ala Pro Gly Pro Ser Ala Cys Pro Cys Leu Cys
                170                     175                     180

Thr Glu Glu Gly Pro Leu Cys Ala Gln Pro Glu Cys Pro Arg Leu
                185                     190                     195

His Pro Arg Cys Ile His Val Asp Thr Ser Gln Cys Cys Pro Gln
                200                     205                     210

Cys Lys Glu Arg Lys Asn Tyr Cys Glu Phe Arg Gly Lys Thr Tyr
                215                     220                     225

Gln Thr Leu Glu Glu Phe Val Val Ser Pro Cys Glu Arg Cys Arg
                230                     235                     240

Cys Glu Ala Asn Gly Glu Val Leu Cys Thr Val Ser Ala Cys Pro
                245                     250                     255

Gln Thr Glu Cys Val Asp Pro Val Tyr Glu Pro Asp Gln Cys Cys
                260                     265                     270

Pro Ile Cys Lys Asn Gly Pro Asn Cys Phe Ala Glu Thr Ala Val
                275                     280                     285

Ile Pro Ala Gly Arg Glu Val Lys Thr Asp Glu Cys Thr Ile Cys
                290                     295                     300

His Cys Thr Tyr Glu Glu Gly Thr Trp Arg Ile Glu Arg Gln Ala
                305                     310                     315

Met Cys Thr Arg His Glu Cys Arg Gln Met
                320                     325
```

&lt;210&gt; 231
&lt;211&gt; 1728
&lt;212&gt; DNA
&lt;213&gt; Homosapiens

&lt;400&gt; 231
```
ggccggacgc ctccgcgtta cgggatgaat taacggcggg ttccgcacgg 50

aggttgtgac ccctacggag ccccagcttg cccacgcacc ccactcggcg 100

tcgcgcggcg tgccctgctt gtcacaggtg ggaggctgga actatcaggc 150

tgaaaaacag agtgggtact ctcttctggg aagctggcaa caaatggatg 200

atgtgatata tgcattccag gggaagggaa attgtggtgc ttctgaaccc 250

atggtcaatt aacgaggcag tttctagcta ctgcacgtac ttcataaagc 300

aggactctaa aagctttgga atcatggtgt catggaaagg gatttacttt 350

atactgactc tgttttgggg aagctttttt ggaagcattt tcatgctgag 400

tccctttttta cctttgatgt ttgtaaaccc atcttggtat cgctggatca 450

acaaccgcct tgtggcaaca tggctcaccc tacctgtggc attattggag 500

accatgtttg gtgtaaaagt gattataact ggggatgcat ttgttcctgg 550
```

282

```
agaaagaagt gtcattatca tgaaccatcg acaagaatg gactggatgt 600

tcctgtggaa ttgcctgatg cgatatagct acctcagatt ggagaaaatt 650

tgcctcaaag cgagtctcaa aggtgttcct ggatttggtt gggccatgca 700

ggctgctgcc tatatcttca ttcataggaa atggaaggat gacaagagcc 750

atttcgaaga catgattgat tacttttgtg atattcacga accacttcaa 800

ctcctcatat tcccagaagg gactgatctc acagaaaaca gcaagtctcg 850

aagtaatgca tttgctgaaa aaaatggact tcagaaatat gaatatgttt 900

tacatccaag aactacaggc tttacttttg tggtagaccg tctaagagaa 950

ggtaagaacc ttgatgctgt ccatgatatc actgtggcgt atcctcacaa 1000

cattcctcaa tcagagaagc acctcctcca aggagacttt cccagggaaa 1050

tccactttca cgtccaccgg tatccaatag acaccctccc cacatccaag 1100

gaggaccttc aactctggtg ccacaaacgg tgggaagaga aagaagagag 1150

gctgcgttcc ttctatcaag gggagaagaa tttttatttt accggacaga 1200

gtgtcattcc accttgcaag tctgaactca gggtccttgt ggtcaaattg 1250

ctctctatac tgtattggac cctgttcagc cctgcaatgt gcctactcat 1300

atatttgtac agtcttgtta agtggtattt tataatcacc attgtaatct 1350

ttgtgctgca agagagaata tttggtggac tggagatcat agaacttgca 1400

tgttaccgac ttttacacaa acagccacat ttaaattcaa agaaaaatga 1450

gtaagattat aaggtttgcc atgtgaaaac ctagagcata ttttggaaat 1500

gttctaaacc tttctaagct cagatgcatt tttgcatgac tatgtcgaat 1550

atttcttact gccatcatta tttgttaaag atattttgca cttaattttg 1600

tgggaaaaat attgctacaa ttttttttaa tctctgaatg taatttcgat 1650

actgtgtaca tagcagggag tgatcggggt gaaataactt gggccagaat 1700

attattaaac aatcatcagg cttttaaa 1728
```

<210> 232
<211> 414
<212> PRT
<213> Homosapiens

<400> 232

| Met | His | Ser | Arg | Gly | Arg | Glu | Ile | Val | Val | Leu | Leu | Asn | Pro | Trp |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

| Ser | Ile | Asn | Glu | Ala | Val | Ser | Ser | Tyr | Cys | Thr | Tyr | Phe | Ile | Lys |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |

| Gln | Asp | Ser | Lys | Ser | Phe | Gly | Ile | Met | Val | Ser | Trp | Lys | Gly | Ile |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     |     | 45  |

283

```
Tyr Phe Ile Leu Thr Leu Phe Trp Gly Ser Phe Phe Gly Ser Ile
             50              55                          60

Phe Met Leu Ser Pro Phe Leu Pro Leu Met Phe Val Asn Pro Ser
             65              70                          75

Trp Tyr Arg Trp Ile Asn Asn Arg Leu Val Ala Thr Trp Leu Thr
             80              85                          90

Leu Pro Val Ala Leu Leu Glu Thr Met Phe Gly Val Lys Val Ile
             95             100                         105

Ile Thr Gly Asp Ala Phe Val Pro Gly Glu Arg Ser Val Ile Ile
            110             115                         120

Met Asn His Arg Thr Arg Met Asp Trp Met Phe Leu Trp Asn Cys
            125             130                         135

Leu Met Arg Tyr Ser Tyr Leu Arg Leu Glu Lys Ile Cys Leu Lys
            140             145                         150

Ala Ser Leu Lys Gly Val Pro Gly Phe Gly Trp Ala Met Gln Ala
            155             160                         165

Ala Ala Tyr Ile Phe Ile His Arg Lys Trp Lys Asp Asp Lys Ser
            170             175                         180

His Phe Glu Asp Met Ile Asp Tyr Phe Cys Asp Ile His Glu Pro
            185             190                         195

Leu Gln Leu Leu Ile Phe Pro Glu Gly Thr Asp Leu Thr Glu Asn
            200             205                         210

Ser Lys Ser Arg Ser Asn Ala Phe Ala Glu Lys Asn Gly Leu Gln
            215             220                         225

Lys Tyr Glu Tyr Val Leu His Pro Arg Thr Thr Gly Phe Thr Phe
            230             235                         240

Val Val Asp Arg Leu Arg Glu Gly Lys Asn Leu Asp Ala Val His
            245             250                         255

Asp Ile Thr Val Ala Tyr Pro His Asn Ile Pro Gln Ser Glu Lys
            260             265                         270

His Leu Leu Gln Gly Asp Phe Pro Arg Glu Ile His Phe His Val
            275             280                         285

His Arg Tyr Pro Ile Asp Thr Leu Pro Thr Ser Lys Glu Asp Leu
            290             295                         300

Gln Leu Trp Cys His Lys Arg Trp Glu Glu Lys Glu Glu Arg Leu
            305             310                         315

Arg Ser Phe Tyr Gln Gly Glu Lys Asn Phe Tyr Phe Thr Gly Gln
            320             325                         330

Ser Val Ile Pro Pro Cys Lys Ser Glu Leu Arg Val Leu Val Val
            335             340                         345

Lys Leu Leu Ser Ile Leu Tyr Trp Thr Leu Phe Ser Pro Ala Met
            350             355                         360
```

284

```
Cys Leu Leu Ile Tyr Leu Tyr Ser Leu Val Lys Trp Tyr Phe Ile
              365               370               375

Ile Thr Ile Val Ile Phe Val Leu Gln Glu Arg Ile Phe Gly Gly
              380               385               390

Leu Glu Ile Ile Glu Leu Ala Cys Tyr Arg Leu Leu His Lys Gln
              395               400               405

Pro His Leu Asn Ser Lys Lys Asn Glu
              410
```

<210> 233
<211> 1630
<212> DNA
<213> Homosapiens

<400> 233

```
cggctcgagt gcagctgtgg ggagatttca gtgcattgcc tcccctgggt 50

gctcttcatc ttggatttga aagttgagag cagcatgttt tgcccactga 100

aactcatcct gctgccagtg ttactggatt attccttggg cctgaatgac 150

ttgaatgttt ccccgcctga gctaacagtc catgtgggtg attcagctct 200

gatgggatgt gttttccaga gcacagaaga caaatgtata ttcaagatag 250

actggactct gtcaccagga gagcacgcca aggacgaata tgtgctatac 300

tattactcca atctcagtgt gcctattggg cgcttccaga accgcgtaca 350

cttgatgggg gacatcttat gcaatgatgg ctctctcctg ctccaagatg 400

tgcaagaggc tgaccaggga acctatatct gtgaaatccg cctcaaaggg 450

gagagccagg tgttcaagaa ggcggtggta ctgcatgtgc ttccagagga 500

gcccaaagag ctcatggtcc atgtgggtgg attgattcag atgggatgtg 550

ttttccagag cacagaagtg aaacacgtga ccaaggtaga atggatattt 600

tcaggacggc gcgcaaagga ggagattgta tttcgttact accacaaact 650

caggatgtct gtggagtact cccagagctg gggccacttc agaatcgtg 700

tgaacctggt gggggacatt ttccgcaatg acggttccat catgcttcaa 750

ggagtgaggg agtcagatgg aggaaactac acctgcagta tccacctagg 800

gaacctggtg ttcaagaaaa ccattgtgct gcatgtcagc ccggaagagc 850

ctcgaacact ggtgaccccg gcagccctga ggcctctggt cttgggtggt 900

aatcagttgg tgatcattgt gggaattgtc tgtgccacaa tcctgctgct 950

ccctgttctg atattgatcg tgaagaagac ctgtggaaat aagagttcag 1000

tgaattctac agtcttggtg aagaacacga agaagactaa tccagagata 1050

aaagaaaaac cctgccattt tgaaagatgt gaagggagag aacacattta 1100

ctccccaata attgtacggg aggtgatcga ggaagaagaa ccaagtgaaa 1150
```

```
aatcagaggc cacctacatg accatgcacc cagtttggcc ttctctgagg 1200

tcagatcgga acaactcact tgaaaaaaag tcaggtgggg gaatgccaaa 1250

aacacagcaa gccttttgag aagaatggag agtcccttca tctcagcagc 1300

ggtggagact ctctcctgtg tgtgtcctgg ccactctac cagtgatttc 1350

agactcccgc tctcccagct gtcctcctgt ctcattgttt ggtcaataca 1400

ctgaagatgg agaatttgga gcctggcaga gagactggac agctctggag 1450

gaacaggcct gctgagggga ggggagcatg gacttggcct ctggagtggg 1500

acactggccc tgggaaccag gctgagctga gtggcctcaa accccccgtt 1550

ggatcagacc ctcctgtggg cagggttctt agtggatgag ttactgggaa 1600

gaatcagaga taaaaaccaa cccaaatcaa 1630
```

<210> 234
<211> 394
<212> PRT
<213> Homosapiens

<400> 234

```
Met Phe Cys Pro Leu Lys Leu Ile Leu Leu Pro Val Leu Leu Asp
 1               5                  10                  15

Tyr Ser Leu Gly Leu Asn Asp Leu Asn Val Ser Pro Pro Glu Leu
             20                  25                  30

Thr Val His Val Gly Asp Ser Ala Leu Met Gly Cys Val Phe Gln
             35                  40                  45

Ser Thr Glu Asp Lys Cys Ile Phe Lys Ile Asp Trp Thr Leu Ser
             50                  55                  60

Pro Gly Glu His Ala Lys Asp Glu Tyr Val Leu Tyr Tyr Tyr Ser
             65                  70                  75

Asn Leu Ser Val Pro Ile Gly Arg Phe Gln Asn Arg Val His Leu
             80                  85                  90

Met Gly Asp Ile Leu Cys Asn Asp Gly Ser Leu Leu Leu Gln Asp
             95                  100                 105

Val Gln Glu Ala Asp Gln Gly Thr Tyr Ile Cys Glu Ile Arg Leu
             110                 115                 120

Lys Gly Glu Ser Gln Val Phe Lys Lys Ala Val Val Leu His Val
             125                 130                 135

Leu Pro Glu Glu Pro Lys Glu Leu Met Val His Val Gly Gly Leu
             140                 145                 150

Ile Gln Met Gly Cys Val Phe Gln Ser Thr Glu Val Lys His Val
             155                 160                 165

Thr Lys Val Glu Trp Ile Phe Ser Gly Arg Arg Ala Lys Glu Glu
             170                 175                 180

Ile Val Phe Arg Tyr Tyr His Lys Leu Arg Met Ser Val Glu Tyr
```

286

```
                185                     190                     195
```

Ser Gln Ser Trp Gly His Phe Gln Asn Arg Val Asn Leu Val Gly
                200                 205                     210

Asp Ile Phe Arg Asn Asp Gly Ser Ile Met Leu Gln Gly Val Arg
                215                 220                     225

Glu Ser Asp Gly Gly Asn Tyr Thr Cys Ser Ile His Leu Gly Asn
                230                 235                     240

Leu Val Phe Lys Lys Thr Ile Val Leu His Val Ser Pro Glu Glu
                245                 250                     255

Pro Arg Thr Leu Val Thr Pro Ala Ala Leu Arg Pro Leu Val Leu
                260                 265                     270

Gly Gly Asn Gln Leu Val Ile Ile Val Gly Ile Val Cys Ala Thr
                275                 280                     285

Ile Leu Leu Leu Pro Val Leu Ile Leu Ile Val Lys Lys Thr Cys
                290                 295                     300

Gly Asn Lys Ser Ser Val Asn Ser Thr Val Leu Val Lys Asn Thr
                305                 310                     315

Lys Lys Thr Asn Pro Glu Ile Lys Glu Lys Pro Cys His Phe Glu
                320                 325                     330

Arg Cys Glu Gly Glu Lys His Ile Tyr Ser Pro Ile Ile Val Arg
                335                 340                     345

Glu Val Ile Glu Glu Glu Glu Pro Ser Glu Lys Ser Glu Ala Thr
                350                 355                     360

Tyr Met Thr Met His Pro Val Trp Pro Ser Leu Arg Ser Asp Arg
                365                 370                     375

Asn Asn Ser Leu Glu Lys Lys Ser Gly Gly Gly Met Pro Lys Thr
                380                 385                     390

Gln Gln Ala Phe

<210> 235
<211> 537
<212> DNA
<213> Homosapiens

<400> 235
 taaaacagct acaatattcc agggccagtc acttgccatt tctcataaca 50

 gcgtcagaga gaaagaactg actgaaacgt ttgagatgaa gaaagttctc 100

 ctcctgatca cagccatctt ggcagtggct gttggtttcc cagtctctca 150

 agaccaggaa cgagaaaaaa gaagtatcag tgacagcgat gaattagctt 200

 cagggttttt tgtgttccct tacccatatc catttcgccc acttccacca 250

 attccatttc caagatttcc atggtttaga cgtaattttc ctattccaat 300

 acctgaatct gcccctacaa ctccccttcc tagcgaaaag taaacaagaa 350

```
ggataagtca cgataaacct ggtcacctga aattgaaatt gagccacttc 400

cttgaagaat caaaattcct gttaataaaa gaaaaacaaa tgtaattgaa 450

atagcacaca gcattctcta gtcaatatct ttagtgatct tctttaataa 500

acatgaaagc aaagattttg gtttcttaat ttccaca 537
```

<210> 236
<211> 85
<212> PRT
<213> Homosapiens

<400> 236

```
Met Lys Lys Val Leu Leu Leu Ile Thr Ala Ile Leu Ala Val Ala
 1               5                  10                 15

Val Gly Phe Pro Val Ser Gln Asp Gln Glu Arg Glu Lys Arg Ser
                20                  25                 30

Ile Ser Asp Ser Asp Glu Leu Ala Ser Gly Phe Phe Val Phe Pro
                35                  40                 45

Tyr Pro Tyr Pro Phe Arg Pro Leu Pro Pro Ile Pro Phe Pro Arg
                50                  55                 60

Phe Pro Trp Phe Arg Arg Asn Phe Pro Ile Pro Ile Pro Glu Ser
                65                  70                 75

Ala Pro Thr Thr Pro Leu Pro Ser Glu Lys
                80                  85
```

<210> 237
<211> 1315
<212> DNA
<213> Homosapiens

<400> 237

```
tcgccatggc ctctgccgga atgcagatcc tgggagtcgt cctgacactg 50

ctgggctggg tgaatggcct ggtctcctgt gccctgccca tgtggaaggt 100

gaccgctttc atcggcaaca gcatcgtggt ggcccaggtg gtgtgggagg 150

gcctgtggat gtcctgcgtg gtgcagagca ccggccagat gcagtgcaag 200

gtgtacgact cactgctggc gctgccacag gacctgcagg ctgcacgtgc 250

cctctgtgtc atcgccctcc ttgtggccct gttcggcttg ctggtctacc 300

ttgctggggc caagtgtacc acctgtgtgg aggagaagga ttccaaggcc 350

cgcctggtgc tcacctctgg gattgtcttt gtcatctcag gggtcctgac 400

gctaatcccc gtgtgctgga cggcgcatgc catcatccgg gacttctata 450

acccctggt ggctgaggcc caaaagcggg agctgggggc ctccctctac 500

ttgggctggg cggcctcagg ccttttgttg ctgggtgggg ggttgctgtg 550

ctgcacttgc ccctcggggg ggtcccaggg ccccagccat tacatggccc 600

gctactcaac atctgcccct gccatctctc gggggccctc tgagtaccct 650
```

```
accaagaatt acgtctgacg tggaggggaa tggggggctcc gctggcgcta 700

gagccatcca gaagtggcag tgcccaacag ctttgggatg ggttcgtacc 750

ttttgtttct gcctcctgct attttctttt tgactgagga tatttaaaat 800

tcatttgaaa actgagccaa ggtgttgact cagactctca cttaggctct 850

gctgtttctc acccttggat gatggagcca agagggggat gctttgagat 900

tctggatctt gacatgccca tcttagaagc cagtcaagct atggaactaa 950

tgcggaggct gcttgctgtg ctggctttgc aacaagacag actgtcccca 1000

agagttcctg ctgctgctgg gggctgggct ccctagatg tcactggaca 1050

gctgcccccc atcctactca ggtctctgga gctcctctct tcacccctgg 1100

aaaaacaaat catctgttaa caaaggactg cccacctccg gaacttctga 1150

cctctgtttc ctccgtcctg ataagacgtc cacccccag ggccaggtcc 1200

cagctatgta gaccccgcc cccacctcca acactgcacc cttctgccct 1250

gcccccctcg tctcacccccc tttacactca cattttatc aaataaagca 1300

tgttttgtta gtgca 1315
```

```
<210> 238
<211> 220
<212> PRT
<213> Homosapiens

<400> 238
 Met Ala Ser Ala Gly Met Gln Ile Leu Gly Val Val Leu Thr Leu
  1               5                  10                  15

 Leu Gly Trp Val Asn Gly Leu Val Ser Cys Ala Leu Pro Met Trp
               20                  25                  30

 Lys Val Thr Ala Phe Ile Gly Asn Ser Ile Val Val Ala Gln Val
               35                  40                  45

 Val Trp Glu Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly
               50                  55                  60

 Gln Met Gln Cys Lys Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln
               65                  70                  75

 Asp Leu Gln Ala Ala Arg Ala Leu Cys Val Ile Ala Leu Leu Val
               80                  85                  90

 Ala Leu Phe Gly Leu Leu Val Tyr Leu Ala Gly Ala Lys Cys Thr
               95                  100                 105

 Thr Cys Val Glu Glu Lys Asp Ser Lys Ala Arg Leu Val Leu Thr
               110                 115                 120

 Ser Gly Ile Val Phe Val Ile Ser Gly Val Leu Thr Leu Ile Pro
               125                 130                 135

 Val Cys Trp Thr Ala His Ala Ile Ile Arg Asp Phe Tyr Asn Pro
               140                 145                 150
```

289

```
Leu Val Ala Glu Ala Gln Lys Arg Glu Leu Gly Ala Ser Leu Tyr
            155               160               165

Leu Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly Leu
            170               175               180

Leu Cys Cys Thr Cys Pro Ser Gly Gly Ser Gln Gly Pro Ser His
            185               190               195

Tyr Met Ala Arg Tyr Ser Thr Ser Ala Pro Ala Ile Ser Arg Gly
            200               205               210

Pro Ser Glu Tyr Pro Thr Lys Asn Tyr Val
            215               220
```

<210> 239
<211> 535
<212> DNA
<213> Homosapiens

<400> 239
```
agtgacaatc tcagagcagc ttctacacca cagccatttc cagcatgaag 50

atcactgggg gtctccttct gctctgtaca gtggtctatt tctgtagcag 100

ctcagaagct gctagtctgt ctccaaaaaa agtggactgc agcatttaca 150

agaagtatcc agtggtggcc atcccctgcc ccatcacata cctaccagtt 200

tgtggttctg actacatcac ctatgggaat gaatgtcact tgtgtaccga 250

gagcttgaaa agtaatggaa gagttcagtt tcttcacgat ggaagttgct 300

aaattctcca tggacataga gagaaaggaa tgatattctc atcatcatct 350

tcatcatccc aggctctgac tgagtttctt tcagttttac tgatgttctg 400

ggtgggggac agagccagat tcagagtaat cttgactgaa tggagaaagt 450

ttctgtgcta cccctacaaa cccatgcctc actgacagac cagcattttt 500

tttttaacac gtcaataaaa aaataatctc ccaga 535
```

<210> 240
<211> 85
<212> PRT
<213> Homosapiens

<400> 240
```
Met Lys Ile Thr Gly Gly Leu Leu Leu Leu Cys Thr Val Val Tyr
  1           5               10               15

Phe Cys Ser Ser Ser Glu Ala Ala Ser Leu Ser Pro Lys Lys Val
            20               25               30

Asp Cys Ser Ile Tyr Lys Lys Tyr Pro Val Val Ala Ile Pro Cys
            35               40               45

Pro Ile Thr Tyr Leu Pro Val Cys Gly Ser Asp Tyr Ile Thr Tyr
            50               55               60

Gly Asn Glu Cys His Leu Cys Thr Glu Ser Leu Lys Ser Asn Gly
            65               70               75
```

Arg Val Gln Phe Leu His Asp Gly Ser Cys
            80                85

<210> 241
<211> 742
<212> DNA
<213> Homosapiens

<400> 241
cccgcgcccg gttctccctc gcagcacctc gaagtgcgcc cctcgccctc 50

ctgctcgcgc cccgccgcca tggctgcctc ccccgcgcgg cctgctgtcc 100

tggccctgac cgggctggcg ctgctcctgc tcctgtgctg gggcccaggt 150

ggcataagtg gaaataaact caagctgatg cttcaaaaac gagaagcacc 200

tgttccaact aagactaaag tggccgttga tgagaataaa gccaaagaat 250

tccttggcag cctgaagcgc cagaagcggc agctgtggga ccggactcgg 300

cccgaggtgc agcagtggta ccagcagttt ctctacatgg gctttgatga 350

agcgaaattt gaagatgaca tcacctattg gcttaacaga gatcgaaatg 400

gacatgaata ctatggcgat tactaccaac gtcactatga tgaagactct 450

gcaattggtc cccggagccc ctacggcttt aggcatggag ccagcgtcaa 500

ctacgatgac tactaaccat gacttgccac acgctgtaca agaagcaaat 550

agcgattctc ttcatgtatc tcctaatgcc ttacactact tggtttctga 600

tttgctctat ttcagcagat cttttctacc tactttgtgt gatcaaaaaa 650

gaagagttaa aacaacacat gtaaatgcct tttgatattt catgggaatg 700

cctctcattt aaaaatagaa ataaagcatt ttgttaaaaa ga 742

<210> 242
<211> 148
<212> PRT
<213> Homosapiens

<400> 242
Met Ala Ala Ser Pro Ala Arg Pro Ala Val Leu Ala Leu Thr Gly
  1           5               10             15

Leu Ala Leu Leu Leu Leu Leu Cys Trp Gly Pro Gly Gly Ile Ser
            20             25            30

Gly Asn Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val
            35             40            45

Pro Thr Lys Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu
            50             55            60

Phe Leu Gly Ser Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg
            65             70            75

Thr Arg Pro Glu Val Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met
            80             85            90

```
Gly Phe Asp Glu Ala Lys Phe Glu Asp Asp Ile Thr Tyr Trp Leu
                95              100                 105

Asn Arg Asp Arg Asn Gly His Glu Tyr Tyr Gly Asp Tyr Tyr Gln
                110              115                 120

Arg His Tyr Asp Glu Asp Ser Ala Ile Gly Pro Arg Ser Pro Tyr
                125              130                 135

Gly Phe Arg His Gly Ala Ser Val Asn Tyr Asp Asp Tyr
                140              145
```

<210> 243
<211> 2119
<212> DNA
<213> Homosapiens

<400> 243

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ctccattaaa ccaccaccag ctccccaagc caccccttca gccatgaagt  50

tcctgctcct ggtcttggca gccctcggat cctgaccca ggtgatccca  100

gccagtgcag gtgggtcaaa atgtgtgagt aacaccccag gatactgcag  150

gacatgttgc cactgggggg agacagcatt gttcatgtgc aacgcttcca  200

gaaaatgctg catcagctac tccttcctgc cgaagcctga cctaccacag  250

ctcatcggta accactggca atcaaggaga agaaacacac aaaggaaaga  300

caagaagcaa caaacgaccg taacatcata ataaccactg ctatcgcctc  350

caccaactca gagaaatatc atttccacag ttccaattcc tcctacattg  400

ctgagtacta gccaaggctc ctctttatgg ggcagatatc tatagccaac  450

cccaaaactt ctgtcttcta tcattctgtc attcatctag taactaattt  500

ggagtttgta tctatcttac gagaacaatc atcatgcaga ttcgtccaca  550

ggggatctgt cagtttgggt cctccaaatg aaaaatgtca agacagaatt  600

ggacatgcaa aagattgact gggagaacac acctctgatg acaaaggtg  650

agacagagca gccacaggca gggagagcct tcagactgca acgctggcct  700

gatacgtgtc aaaggagaga gggatagagg aggattgaat agaaggagac  750

taagactgca gctctaagaa agtctcagcc aaacagatgg ggaggcccaa  800

agcaaggctt gccctcaga ggagctcacg cagggcagga atagccaggt  850

tctcatatcc caggggttca gacttggctg agaacagccc ctggagaaca  900

tggggtgact gctaccatag gtctggaagt atgaggctgt ccaccaacta  950

tccccttgaa gcaagttctc ttgaaaggaa atctaaacag tgcacccca  1000

tggctgccac ggagtataag gagggagaga aaggagctga aagtctaggt  1050

ttggccagct aggtagactg acttgtgagg tatttattta ttcatttgag  1100

taacaaagca gacagaatac atagccacca ttggtagtac accccaaaag  1150
```

```
caaggatggc atgatgctgg tgactcaaac gtgcctactc atggtgtcaa 1200

attggcataa tcctcttggg aagctgtgtg gaaataagca cagagaagca 1250

gaactctaat tgcttaatcc actaaacatt acttctggga attggctcat 1300

cataaattat ccaagagaaa gcacaagtt atgggcacaa aggtttttcca 1350

tataatatta tttaaaatgc tgagaaaatg aaaaaatcta aatggtgaaa 1400

tatatactaa tgccatctat aaatacaaac aaatagaatg tttatagaat 1450

aatggaacat aataacatta ttcaaaattg catttatgct atagttgtca 1500

aaattgtctc cttatatgat acaaaactca tgaaaattat gacttttttg 1550

tttggttgga aagcagaatt atgcataaat ttcctcttac agttcgatgc 1600

ccattagttt tatataacat ttatttgaca cgtactgact tctatctgag 1650

aagaacaaac caaaacactc aggcctaaat aattaaaaac ggtcctaaaa 1700

actagcaaac cagataagaa aagatgttaa tgcccattcc ctaacttatg 1750

tcttagacca aaattaattc tagatggttt taaaatgaca gtgtaaaagt 1800

aaagtattaa aagattgtgt ggtcaaatat tcaatttaag agcaaggaaa 1850

ttcttataaa tataacaata gaggcagaac tcatgtaaga ataaattgat 1900

taggtggtat taaatattaa gttcttatgt atgtcaaaag atatcatttt 1950

gaaattcatc catcttattg ggtattgcag gagttcattc ctttttgttt 2000

ataaatactc ttccgtcata tgaatagtat tcatttgtat actggtttgt 2050

tgatggacat ttgggttgtt cccagtttat ggctattaca aataaagctt 2100

ctatgaacat ttatgtaca 2119
```

```
<210> 244
<211> 95
<212> PRT
<213> Homosapiens

<400> 244
 Met Lys Phe Leu Leu Leu Val Leu Ala Ala Leu Gly Phe Leu Thr
  1               5                  10                  15

 Gln Val Ile Pro Ala Ser Ala Gly Gly Ser Lys Cys Val Ser Asn
                 20                  25                  30

 Thr Pro Gly Tyr Cys Arg Thr Cys Cys His Trp Gly Glu Thr Ala
                 35                  40                  45

 Leu Phe Met Cys Asn Ala Ser Arg Lys Cys Cys Ile Ser Tyr Ser
                 50                  55                  60

 Phe Leu Pro Lys Pro Asp Leu Pro Gln Leu Ile Gly Asn His Trp
                 65                  70                  75

 Gln Ser Arg Arg Arg Asn Thr Gln Arg Lys Asp Lys Lys Gln Gln
                 80                  85                  90
```

Thr Thr Val Thr Ser
                95

<210> 245
<211> 1257
<212> DNA
<213> Homosapiens

<400> 245
 ggagagaggc gcgcgggtga aaggcgcatt gatgcagcct gcggcggcct 50

 cggagcgcgg cggagccaga cgctgaccac gttcctctcc tcggtctcct 100

 ccgcctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150

 gccccgccgc ctccccgcag cggctccgcg gcctcctgct gctcctgctg 200

 ctgcagctgc ccgcgccgtc gagcgcctct gagatcccca aggggaagca 250

 aaaggcgcag ctccggcaga gggaggtggt ggacctgtat aatggaatgt 300

 gcttacaagg gccagcagga gtgcctggtc gagacgggag ccctggggcc 350

 aatgttattc cgggtacacc tgggatccca ggtcgggatg gattcaaagg 400

 agaaaagggg gaatgtctga gggaaagctt tgaggagtcc tggacaccca 450

 actacaagca gtgttcatgg agttcattga attatggcat agatcttggg 500

 aaaattgcgg agtgtacatt tacaaagatg cgttcaaata gtgctctaag 550

 agttttgttc agtggctcac ttcggctaaa atgcagaaat gcatgctgtc 600

 agcgttggta tttcacattc aatggagctg aatgttcagg acctcttccc 650

 attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700

 aattaatatt catcgcactt cttctgtgga aggactttgt gaaggaattg 750

 gtgctggatt agtggatgtt gctatctggg ttggcacttg ttcagattac 800

 ccaaaaggag atgcttctac tggatggaat tcagtttctc gcatcattat 850

 tgaagaacta ccaaaataaa tgctttaatt ttcatttgct acctcttttt 900

 ttattatgcc ttggaatggt tcacttaaat gacattttaa ataagtttat 950

 gtatacatct gaatgaaaag caaagctaaa tatgtttaca gaccaaagtg 1000

 tgatttcaca ctgttttaa atctagcatt attcattttg cttcaatcaa 1050

 aagtggtttc aatatttttt ttagttggtt agaatacttt cttcatagtc 1100

 acattctctc aacctataat ttggaatatt gttgtggtct tttgtttttt 1150

 ctcttagtat agcattttta aaaaaatata aaagctacca atctttgtac 1200

 aatttgtaaa tgttaagaat ttttttttata tctgttaaat aaaaattatt 1250

 tccaaca 1257

<210> 246
<211> 243

294

<212> PRT
<213> Homosapiens

<400> 246

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Met | Arg | Pro | Gln | Gly | Pro | Ala | Ala | Ser | Pro | Gln | Arg | Leu | Arg | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
 1               5                    10                      15

Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
                 20                   25                      30

Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
                 35                   40                      45

Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
                 50                   55                      60

Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
                 65                   70                      75

Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
                 80                   85                      90

Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
                 95                   100                     105

Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
                 110                  115                     120

Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
                 125                  130                     135

Ala Leu Arg Val Leu Phe Ser Gly Ser Leu Arg Leu Lys Cys Arg
                 140                  145                     150

Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr Phe Asn Gly Ala Glu
                 155                  160                     165

Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile Tyr Leu Asp Gln
                 170                  175                     180

Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His Arg Thr Ser
                 185                  190                     195

Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu Val Asp
                 200                  205                     210

Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly Asp
                 215                  220                     225

Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu
                 230                  235                     240

Leu Pro Lys


<210> 247
<211> 2134
<212> DNA
<213> Homosapiens

<400> 247
 ggccgttggt tggtgcgcgg ctgaagggtg tggcgcgagc agcgtcgttg 50

gttggccggc ggcgggccgg gacgggcatg gccctgctgc tgtgcctggt 100

gtgcctgacg gcggcgctgg cccacggctg tctgcactgc cacagcaact 150

tctccaagaa gttctccttc taccgccacc atgtgaactt caagtcctgg 200

tgggtgggcg acatccccgt gtcaggggcg ctgctcaccg actggagcga 250

cgacacgatg aaggagctgc acctggccat ccccgccaag atcacccggg 300

agaagctgga ccaagtggcg acagcagtgt accagatgat ggatcagctg 350

taccagggga agatgtactt ccccgggtat ttccccaacg agctgcgaaa 400

catcttccgg gagcaggtgc acctcatcca gaacgccatc atcgaaaggc 450

acctggcacc aggcagctgg ggaggagggc agctctccag ggagggaccc 500

agcctagcac ctgaaggatc aatgccatca ccccgcgggg acctccccta 550

agtagccccc agaggcgctg ggagtgttgc caccgccctc ccctgaagtt 600

tgctccatct cacgctgggg gtcaacctgg ggaccccttc cctccgggcc 650

atggacacac atacatgaaa accaggccgc atcgactgtc agcaccgctg 700

tggcatcttc cagtacgaga ccatctcctg caacaactgc acagactcgc 750

acgtcgcctg ctttggctat aactgcgagt agggctcagg catcacaccc 800

acccgtgcca gggccctact gtccctgggg tcccaggctc tccttggagg 850

gggctccccg ccttccacct ggctgtcatc gggtagggcg gggccgtggg 900

ttcaggggcg caccacttcc aagcctgtgt cccacaggtc ctcggcgcag 950

tggaagtcag ctgtccaggg cctcctgaac tacataaata actggcacaa 1000

gtaagtcccc tcctcaaacc aacacaggca gtgtgtgtat gtgagcacct 1050

cgtgggtgag tatgtgtggg gcacaggctg gctccctcag ctcccacgtc 1100

ctagaggggc tcccgaggag gtggaacctc aacccagctc tgcgcaggag 1150

gcggctgcag tccttttctc cctcaaaggt ctccgaccct cagctggagg 1200

cgggcatctt tcctaaaggg tccccatagg gtctggttcc accccatccc 1250

aggtctgtgg tcagagcctg ggagggttcc ctacgatggt taggggtgcc 1300

ccatggaggg gctgactgcc ccacattgcc tttcagacag gacacgagca 1350

tgaggtaagg ccgccctgac ctggacttca gggggagggg gtaaagggag 1400

agaggagggg ggctaggggg tcctctagat cagtgggggc actgcaggtg 1450

gggctctccc tatacctggg acacctgctg gatgtcacct ctgcaaccac 1500

acccatgtgg tggtttcatg aacagaccac gctcctctgc cttctcctgg 1550

cctgggacac acagagccac cccggccttg tgagtgaccc agagaaggga 1600

ggcctcggga gaaggggtgc tcgtaagcca acaccagcgt gccgcggcct 1650

296

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gcacaccctt cggacatccc aggcacgagg gtgtcgtgga tgtggccaca 1700

cataggacca cacgtcccag ctgggaggag aggcctgggg cccccaggga 1750

gggaggcagg gggtggggga catggagagc tgaggcagcc tcgtctcccc 1800

gcagcctggt atcgccagcc ttaaggtgtc tggagccccc acacttggcc 1850

aacctgacct tggaagatgc tgctgagtgt ctcaagcagc actgacagca 1900

gctgggcctg ccccagggca acgtgggggc ggagactcag ctggacagcc 1950

cctgcctgtc actctggagc tgggctgctg ctgcctcagg accccctctc 2000

cgaccccgga cagagctgag ctggccaggg ccaggagggc gggagggagg 2050

gaatgggggt gggctgtgcg cagcatcagc gcctgggcag gtccgcagag 2100

ctgcgggatg tgattaaagt ccctgatgtt tctc 2134
```

<210> 248
<211> 157
<212> PRT
<213> Homosapiens

<400> 248
```
Met Ala Leu Leu Leu Cys Leu Val Cys Leu Thr Ala Ala Leu Ala
  1               5                  10                  15

His Gly Cys Leu His Cys His Ser Asn Phe Ser Lys Lys Phe Ser
             20                  25                  30

Phe Tyr Arg His His Val Asn Phe Lys Ser Trp Trp Val Gly Asp
             35                  40                  45

Ile Pro Val Ser Gly Ala Leu Leu Thr Asp Trp Ser Asp Asp Thr
             50                  55                  60

Met Lys Glu Leu His Leu Ala Ile Pro Ala Lys Ile Thr Arg Glu
             65                  70                  75

Lys Leu Asp Gln Val Ala Thr Ala Val Tyr Gln Met Met Asp Gln
             80                  85                  90

Leu Tyr Gln Gly Lys Met Tyr Phe Pro Gly Tyr Phe Pro Asn Glu
             95                 100                 105

Leu Arg Asn Ile Phe Arg Glu Gln Val His Leu Ile Gln Asn Ala
            110                 115                 120

Ile Ile Glu Arg His Leu Ala Pro Gly Ser Trp Gly Gly Gly Gln
            125                 130                 135

Leu Ser Arg Glu Gly Pro Ser Leu Ala Pro Glu Gly Ser Met Pro
            140                 145                 150

Ser Pro Arg Gly Asp Leu Pro
            155
```

<210> 249
<211> 2387
<212> DNA
<213> Homosapiens

<400> 249
cgacgatgct acgcgcgccc ggctgcctcc tccggacctc cgtagcgcct 50

gccgcggccc tggctgcggc gctgctctcg tcgcttgcgc gctgctctct 100

tctagagccg agggacccgg tggcctcgtc gctcagcccc tatttcggca 150

ccaagactcg ctacgaggat gtcaaccccg tgctattgtc gggccccgag 200

gctccgtggc gggaccctga gctgctggag gggacctgca ccccggtgca 250

gctggtcgcc ctcattcgcc acggcacccg ctaccccacg gtcaaacaga 300

tccgcaagct gaggcagctg cacgggttgc tgcaggcccg cgggtccagg 350

gatggcgggg ctagtagtac cggcagccgc gacctgggtg cagcgctggc 400

cgactggcct ttgtggtacg cggactggat ggacgggcag ctagtagaga 450

agggacggca ggatatgcga cagctggcgc tgcgtctggc ctcgctcttc 500

ccggcccttt tcagccgtga gaactacggc cgcctgcggc tcatcaccag 550

ttccaagcac cgctgcatgg atagcagcgc cgccttcctg caggggctgt 600

ggcagcacta ccaccctggc ttgccgccgc cggacgtcgc agatatggag 650

tttggacctc caacagttaa tgataaacta atgagatttt ttgatcactg 700

tgagaagttt ttaactgaag tagaaaaaaa tgctacagct ctttatcacg 750

tggaagcctt caaaactgga ccagaaatgc agaacatttt aaaaaaagtt 800

gcagctactt tgcaagtgcc agtaaatgat ttaaatgcag atttaattca 850

agtagccttt ttcacctgtt catttgacct ggcaattaaa ggtgttaaat 900

ctccttggtg tgatgttttt gacatagatg atgcaaaggt attagaatat 950

ttaaatgatc tgaaacaata ttggaaaaga ggatatgggt atactattaa 1000

cagtcgatcc agctgcacct tgtttcagga tatctttcag cacttggaca 1050

aagcagttga acagaaacaa aggtctcagc caatttcttc tccagtcatc 1100

ctccagtttg gtcatgcaga gactcttctt ccactgcttt ctctcatggg 1150

ctacttcaaa gacaaggaac ccctaacagc gtacaattac aaaaaacaaa 1200

tgcatcggaa gttccgaagt ggtctcattg taccttatgc ctcgaacctg 1250

atatttgtgc tttaccactg tgaaaatgct aagactccta aagaacaatt 1300

ccgagtgcag atgttattaa atgaaaaggt gttacctttg cttactcac 1350

aagaaactgt ttcattttat gaagatctga gaaccacta caaggacatc 1400

cttcagagtt gtcaaaccag tgaagaatgt gaattagcaa gggctaacag 1450

tacatctgat gaactatgag taactgaaga acatttttaa ttctttagga 1500

atctgcaatg agtgattaca tgcttgtaat aggtaggcaa ttccttgatt 1550

```
acaggaagct tttatattac ttgagtattt ctgtcttttc acagaaaaac 1600

attgggtttc tctctgggtt tggacatgaa atgtaagaaa agatttttca 1650

ctggagcagc tctcttaagg agaaacaaat ctatttagag aaacagctgg 1700

ccctgcaaat gtttacagaa atgaaattct tcctacttat ataagaaatc 1750

tcacactgag atagaattgt gatttcataa taacacttga aaagtgctgg 1800

agtaacaaaa tatctcagtt ggaccatcct taacttgatt gaactgtcta 1850

ggaactttac agattgttct gcagttctct cttctttttcc tcaggtagga 1900

cagctctagc attttcttaa tcaggaatat tgtggtaagc tgggagtatc 1950

actctggaag aaagtaacat ctccagatga gaatttgaaa caagaaacag 2000

agtgttgtaa aaggacacct tcactgaagc aagtcggaaa gtacaatgaa 2050

aataaatatt tttggtattt atttatgaaa tatttgaaca tttttttcaat 2100

aattcctttt tacttctagg aagtctcaaa agaccatctt aaattattat 2150

atgtttggac aattagcaac aagtcagata gttagaatcg aagtttttca 2200

aatccattgc ttagctaact ttttcattct gtcacttggc ttcgattttt 2250

atattttcct attatatgaa atgtatcttt tggttgtttg atttttcttt 2300

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ctataataaa gaaaattctt gtgactttaa aaaaaaa 2387
```

<210> 250
<211> 487
<212> PRT
<213> Homosapiens

<400> 250
```
Met Leu Arg Ala Pro Gly Cys Leu Leu Arg Thr Ser Val Ala Pro
 1               5                  10                  15

Ala Ala Ala Leu Ala Ala Ala Leu Leu Ser Ser Leu Ala Arg Cys
                20                  25                  30

Ser Leu Leu Glu Pro Arg Asp Pro Val Ala Ser Ser Leu Ser Pro
                35                  40                  45

Tyr Phe Gly Thr Lys Thr Arg Tyr Glu Asp Val Asn Pro Val Leu
                50                  55                  60

Leu Ser Gly Pro Glu Ala Pro Trp Arg Asp Pro Glu Leu Leu Glu
                65                  70                  75

Gly Thr Cys Thr Pro Val Gln Leu Val Ala Leu Ile Arg His Gly
                80                  85                  90

Thr Arg Tyr Pro Thr Val Lys Gln Ile Arg Lys Leu Arg Gln Leu
                95                  100                 105

His Gly Leu Leu Gln Ala Arg Gly Ser Arg Asp Gly Gly Ala Ser
                110                 115                 120
```

299

```
Ser Thr Gly Ser Arg Asp Leu Gly Ala Ala Leu Ala Asp Trp Pro
              125             130                     135

Leu Trp Tyr Ala Asp Trp Met Asp Gly Gln Leu Val Glu Lys Gly
              140             145                     150

Arg Gln Asp Met Arg Gln Leu Ala Leu Arg Leu Ala Ser Leu Phe
              155             160                     165

Pro Ala Leu Phe Ser Arg Glu Asn Tyr Gly Arg Leu Arg Leu Ile
              170             175                     180

Thr Ser Ser Lys His Arg Cys Met Asp Ser Ser Ala Ala Phe Leu
              185             190                     195

Gln Gly Leu Trp Gln His Tyr His Pro Gly Leu Pro Pro Pro Asp
              200             205                     210

Val Ala Asp Met Glu Phe Gly Pro Pro Thr Val Asn Asp Lys Leu
              215             220                     225

Met Arg Phe Phe Asp His Cys Glu Lys Phe Leu Thr Glu Val Glu
              230             235                     240

Lys Asn Ala Thr Ala Leu Tyr His Val Glu Ala Phe Lys Thr Gly
              245             250                     255

Pro Glu Met Gln Asn Ile Leu Lys Lys Val Ala Ala Thr Leu Gln
              260             265                     270

Val Pro Val Asn Asp Leu Asn Ala Asp Leu Ile Gln Val Ala Phe
              275             280                     285

Phe Thr Cys Ser Phe Asp Leu Ala Ile Lys Gly Val Lys Ser Pro
              290             295                     300

Trp Cys Asp Val Phe Asp Ile Asp Asp Ala Lys Val Leu Glu Tyr
              305             310                     315

Leu Asn Asp Leu Lys Gln Tyr Trp Lys Arg Gly Tyr Gly Tyr Thr
              320             325                     330

Ile Asn Ser Arg Ser Ser Cys Thr Leu Phe Gln Asp Ile Phe Gln
              335             340                     345

His Leu Asp Lys Ala Val Glu Gln Lys Gln Arg Ser Gln Pro Ile
              350             355                     360

Ser Ser Pro Val Ile Leu Gln Phe Gly His Ala Glu Thr Leu Leu
              365             370                     375

Pro Leu Leu Ser Leu Met Gly Tyr Phe Lys Asp Lys Glu Pro Leu
              380             385                     390

Thr Ala Tyr Asn Tyr Lys Lys Gln Met His Arg Lys Phe Arg Ser
              395             400                     405

Gly Leu Ile Val Pro Tyr Ala Ser Asn Leu Ile Phe Val Leu Tyr
              410             415                     420

His Cys Glu Asn Ala Lys Thr Pro Lys Glu Gln Phe Arg Val Gln
              425             430                     435
```

300

```
Met Leu Leu Asn Glu Lys Val Leu Pro Leu Ala Tyr Ser Gln Glu
              440             445             450

Thr Val Ser Phe Tyr Glu Asp Leu Lys Asn His Tyr Lys Asp Ile
              455             460             465

Leu Gln Ser Cys Gln Thr Ser Glu Glu Cys Glu Leu Ala Arg Ala
              470             475             480

Asn Ser Thr Ser Asp Glu Leu
              485
```

<210> 251
<211> 1777
<212> DNA
<213> Homosapiens

<400> 251

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ccggcgcggg tggcggagag atcagaagcc tcttccccaa gccgagccaa  100

cctcagcggg acccgggct cagggacgcg gcggcggcgg cggcgactgc  150

agtggctgga cgatggcagc gtccgccgga ccggggcgg tgattgcagc  200

cccagacagc cggcgctggc tgtggtcggt gctggcggcg gcgcttgggc  250

tcttgacagc tggagtatca gccttggaag tatatacgcc aaaagaaatc  300

ttcgtggcaa atggtacaca agggaagctg acctgcaagt tcaagtctac  350

tagtacgact ggcgggttga cctcagtctc ctggagcttc agccagagg  400

gggccgacac tactgtgtcg tttttccact actcccaagg gcaagtgtac  450

cttgggaatt atccaccatt taaagacaga atcagctggg ctggagacct  500

tgacaagaaa gatgcatcaa tcaacatag aaaatatgcag tttatacaca  550

atggcaccta tatctgtgat gtcaaaaacc ctcctgacat cgttgtccag  600

cctggacaca ttaggctcta tgtcgtagaa aaagagaatt gcctgtgtt  650

tccagtttgg gtagtggtgg gcatagttac tgctgtggtc ctaggtctca  700

ctctgctcat cagcatgatt ctggctgtcc tctatagaag gaaaaactct  750

aaacgggatt acactggctg cagtacatca gagagtttgt caccagttaa  800

gcaggctcct cggaagtccc cctccgacac tgagggtctt gtaaagagtc  850

tgccttctgg atctcaccag ggcccagtca tatatgcaca gttagaccac  900

tccggcggac atcacagtga caagattaac aagtcagagt ctgtggtgta  950

tgcggatatc cgaaagaatt aagagaatac ctagaacata tcctcagcaa 1000

gaaacaaaac caaactggac tctcgtgcag aaaatgtagc ccattaccac 1050

atgtagcctt ggagacccag gcaaggacaa gtacacgtgt actcacagag 1100

ggagagaaag atgtgtacaa aggatatgta taaatattct atttagtcat 1150
```

301

```
cctgatatga ggagccagtg ttgcatgatg aaaagatggt atgattctac 1200

atatgtaccc attgtcttgc tgtttttgta ctttcttttc aggtcattta 1250

caattgggag atttcagaaa cattcctttc accatcattt agaaatggtt 1300

tgccttaatg gagacaatag cagatcctgt agtatttcca gtagacatgg 1350

cctttaatc taagggctta agactgatta gtcttagcat ttactgtagt 1400

tggaggatgg agatgctatg atggaagcat acccagggtg gcctttagca 1450

cagtatcagt accatttatt tgtctgccgc ttttaaaaaa tacccattgg 1500

ctatgccact tgaaaacaat ttgagaagtt tttttgaagt ttttctcact 1550

aaaatatggg gcaattgtta gccttacatg ttgtgtagac ttactttaag 1600

tttgcaccct tgaaatgtgt catatcaatt tctggattca taatagcaag 1650

attagcaaag gataaatgcc gaaggtcact tcattctgga cacagttgga 1700

tcaatactga ttaagtagaa aatccaagct ttgcttgaga acttttgtaa 1750

cgtggagagt aaaaagtatc ggtttta 1777
```

&lt;210&gt; 252
&lt;211&gt; 269
&lt;212&gt; PRT
&lt;213&gt; Homosapiens

&lt;400&gt; 252
```
Met Ala Ala Ser Ala Gly Ala Gly Ala Val Ile Ala Ala Pro Asp
  1               5                  10                  15

Ser Arg Arg Trp Leu Trp Ser Val Leu Ala Ala Ala Leu Gly Leu
                 20                  25                  30

Leu Thr Ala Gly Val Ser Ala Leu Glu Val Tyr Thr Pro Lys Glu
                 35                  40                  45

Ile Phe Val Ala Asn Gly Thr Gln Gly Lys Leu Thr Cys Lys Phe
                 50                  55                  60

Lys Ser Thr Ser Thr Thr Gly Gly Leu Thr Ser Val Ser Trp Ser
                 65                  70                  75

Phe Gln Pro Glu Gly Ala Asp Thr Thr Val Ser Phe Phe His Tyr
                 80                  85                  90

Ser Gln Gly Gln Val Tyr Leu Gly Asn Tyr Pro Pro Phe Lys Asp
                 95                 100                 105

Arg Ile Ser Trp Ala Gly Asp Leu Asp Lys Lys Asp Ala Ser Ile
                110                 115                 120

Asn Ile Glu Asn Met Gln Phe Ile His Asn Gly Thr Tyr Ile Cys
                125                 130                 135

Asp Val Lys Asn Pro Pro Asp Ile Val Val Gln Pro Gly His Ile
                140                 145                 150

Arg Leu Tyr Val Val Glu Lys Glu Asn Leu Pro Val Phe Pro Val
```

```
                  155                    160                    165
    Trp Val Val Val Gly Ile Val Thr Ala Val Val Leu Gly Leu Thr
                      170                    175                    180
    Leu Leu Ile Ser Met Ile Leu Ala Val Leu Tyr Arg Arg Lys Asn
                      185                    190                    195
    Ser Lys Arg Asp Tyr Thr Gly Cys Ser Thr Ser Glu Ser Leu Ser
                      200                    205                    210
    Pro Val Lys Gln Ala Pro Arg Lys Ser Pro Ser Asp Thr Glu Gly
                      215                    220                    225
    Leu Val Lys Ser Leu Pro Ser Gly Ser His Gln Gly Pro Val Ile
                      230                    235                    240
    Tyr Ala Gln Leu Asp His Ser Gly Gly His His Ser Asp Lys Ile
                      245                    250                    255
    Asn Lys Ser Glu Ser Val Val Tyr Ala Asp Ile Arg Lys Asn
                      260                    265
```

```
<210> 253
<211> 1150
<212> DNA
<213> Homosapiens

<400> 253
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 gaattcggct cgaggctggt gggaagaagc cgagatggcg gcagccagcg 100

 ctggggcaac ccggctgctc ctgctcttgc tgatggcggt agcagcgccc 150

 agtcgagccc ggggcagcgg ctgccgggcc gggactggtg cgcgaggggc 200

 tggggcggaa ggtcgagagg gcgaggcctg tggcacggtg gggctgctgc 250

 tggagcactc atttgagatc gatgacagtg ccaacttccg gaagcggggc 300

 tcactgctct ggaaccagca ggatggtacc ttgtccctgt cacagcggca 350

 gctcagcgag gaggagcggg gccgactccg ggatgtggca gccctgaatg 400

 gcctgtaccg ggtccggatc caaggcgac ccggggccct ggatggcctg 450

 gaagctggtg gctatgtctc ctcctttgtc cctgcgtgct ccctggtgga 500

 gtcgcacctg tcggaccagc tgaccctgca cgtggatgtg gccggcaacg 550

 tggtgggcgt gtcggtggtg acgcaccccg ggggctgccg gggccatgag 600

 gtggaggacg tggacctgga gctgttcaac acctcggtgc agctgcagcc 650

 gcccaccaca gccccaggcc ctgagacggc ggccttcatt gagcgcctgg 700

 agatggaaca ggcccagaag gccaagaacc cccaggagca gaagtccttc 750

 ttcgccaaat actggatgta catcattccc gtcgtcctgt tcctcatgat 800

 gtcaggagcg ccagacaccg ggggccaggg tgggggtggg ggtggggggtg 850
```

```
gtggtggggg tagtggcctt tgctgtgtgc caccctccct gtaagtctat 900

ttaaaaacat cgacgataca ttgaaatgtg tgaacgtttt gaaaagctac 950

agcttccagc agccaaaagc aactgttgtt ttggcaagac ggtcctgatg 1000

tacaagcttg attgaaattc actgctcact tgatacgtta ttcagaaacc 1050

caaggaatgg ctgtccccat cctcatgtgg ctgtgtggag ctcagctgtg 1100

ttgtgtggca gtttattaaa ctgtccccca gatcgacacg caaaaaaaaa 1150
```

<210> 254
<211> 269
<212> PRT
<213> Homosapiens

<400> 254

```
Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu
1               5                  10                  15

Leu Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys
                20                  25                  30

Arg Ala Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu
                35                  40                  45

Gly Glu Ala Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe
                50                  55                  60

Glu Ile Asp Asp Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu
                65                  70                  75

Trp Asn Gln Gln Asp Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu
                80                  85                  90

Ser Glu Glu Glu Arg Gly Arg Leu Arg Asp Val Ala Ala Leu Asn
                95                  100                 105

Gly Leu Tyr Arg Val Arg Ile Pro Arg Arg Pro Gly Ala Leu Asp
                110                 115                 120

Gly Leu Glu Ala Gly Gly Tyr Val Ser Ser Phe Val Pro Ala Cys
                125                 130                 135

Ser Leu Val Glu Ser His Leu Ser Asp Gln Leu Thr Leu His Val
                140                 145                 150

Asp Val Ala Gly Asn Val Val Gly Val Ser Val Val Thr His Pro
                155                 160                 165

Gly Gly Cys Arg Gly His Glu Val Glu Asp Val Asp Leu Glu Leu
                170                 175                 180

Phe Asn Thr Ser Val Gln Leu Gln Pro Pro Thr Thr Ala Pro Gly
                185                 190                 195

Pro Glu Thr Ala Ala Phe Ile Glu Arg Leu Glu Met Glu Gln Ala
                200                 205                 210

Gln Lys Ala Lys Asn Pro Gln Glu Gln Lys Ser Phe Phe Ala Lys
                215                 220                 225
```

```
    Tyr Trp Met Tyr Ile Ile Pro Val Val Leu Phe Leu Met Met Ser
                    230                 235                 240

    Gly Ala Pro Asp Thr Gly Gly Gln Gly Gly Gly Gly Gly Gly Gly
                    245                 250                 255

    Gly Gly Gly Gly Ser Gly Leu Cys Cys Val Pro Pro Ser Leu                    ,
                    260                 265
```

<210> 255
<211> 1098
<212> DNA
<213> Homosapiens

<400> 255
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 gcgacgcgcg gcggggcggc gagaggaaac gcggcgccgg gccgggcccg 50

 gccctggaga tggtccccgg cgccgcgggc tggtgttgtc tcgtgctctg 100

 gctccccgcg tgcgtcgcgg cccacggctt ccgtatccat gattatttgt 150

 actttcaagt gctgagtcct ggggacattc gatacatctt cacagccaca 200

 cctgccaagg actttggtgg tatctttcac acaaggtatg agcagattca 250

 ccttgtcccc gctgaacctc cagaggcctg cggggaactc agcaacggtt 300

 tcttcatcca ggaccagatt gctctggtgg agagggggggg ctgctccttc 350

 ctctccaaga ctcgggtggt ccaggagcac ggcgggcggg cggtgatcat 400

 ctctgacaac gcagttgaca atgacagctt ctacgtggag atgatccagg 450

 acagtaccca gcgcacagct gacatccccg ccctcttcct gctcggccga 500

 gacggctaca tgatccgccg ctctctggaa cagcatgggc tgccatgggc 550

 catcatttcc atcccagtca atgtcaccag catccccacc tttgagctgc 600

 tgcaaccgcc ctggaccttc tggtagaaga gtttgtccca cattccagcc 650

 ataagtgact ctgagctggg aaggggaaac ccaggaattt tgctacttgg 700

 aatttggaga tagcatctgg ggacaagtgg agccaggtag aggaaaaggg 750

 tttgggcgtt gctaggctga aagggaagcc acaccactgg ccttcccttc 800

 cccagggccc ccaagggtgt ctcatgctac aagaagaggc aagagacagg 850

 ccccagggct tctggctaga acccgaaaca aaaggagctg aaggcaggtg 900

 gcctgagagc catctgtgac ctgtcacact cacctggctc cagcctcccc 950

 tacccagggt ctctgcacag tgaccttcac agcagttgtt ggagtggttt 1000

 aaagagctgg tgtttgggga ctcaataaac cctcactgac tttttagcaa 1050

 taaagcttct catcagggtt gcaaaaaaaa aaaaaaaaaa aaaaaaaa 1098
```
<210> 256
<211> 188
<212> PRT
<213> Homosapiens

```
Met Val Pro Gly Ala Ala Gly Trp Cys Cys Leu Val Leu Trp Leu
 1           5                   10                      15

Pro Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu
            20              25                      30

Tyr Phe Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr
                35              40                      45

Ala Thr Pro Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr
                50              55                      60

Glu Gln Ile His Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly
                65              70                      75

Glu Leu Ser Asn Gly Phe Phe Ile Gln Asp Gln Ile Ala Leu Val
                80              85                      90

Glu Arg Gly Gly Cys Ser Phe Leu Ser Lys Thr Arg Val Val Gln
                95              100                     105

Glu His Gly Gly Arg Ala Val Ile Ile Ser Asp Asn Ala Val Asp
                110             115                     120

Asn Asp Ser Phe Tyr Val Glu Met Ile Gln Asp Ser Thr Gln Arg
                125             130                     135

Thr Ala Asp Ile Pro Ala Leu Phe Leu Leu Gly Arg Asp Gly Tyr
                140             145                     150

Met Ile Arg Arg Ser Leu Glu Gln His Gly Leu Pro Trp Ala Ile
                155             160                     165

Ile Ser Ile Pro Val Asn Val Thr Ser Ile Pro Thr Phe Glu Leu
                170             175                     180

Leu Gln Pro Pro Trp Thr Phe Trp
                185
```

```
ctcgcttctt ccttctggat gggggcccag ggggcccagg agagtataaa 50

ggcgatgtgg agggtgcccg gcacaaccag acgcccagtc acaggcgaga 100

gccctgggat gcaccggcca gaggccatgc tgctgctgct cacgcttgcc 150

ctcctggggg gccccacctg ggcagggaag atgtatggcc ctggaggagg 200

caagtatttc agcaccactg aagactacga ccatgaaatc acaggctgc 250

gggtgtctgt aggtcttctc ctggtgaaaa gtgtccaggt gaaacttgga 300

gactcctggg acgtgaaact gggagcctta ggtgggaata cccaggaagt 350

caccctgcag ccaggcgaat acatcacaaa agtctttgtc gccttccaag 400

ctttcctccg gggtatggtc atgtacacca gcaaggaccg ctatttctat 450
```

306

```
tttgggaagc ttgatggcca gatctcctct gcctacccca gccaagaggg 500

gcaggtgctg gtgggcatct atggccagta tcaactcctt ggcatcaaga 550

gcattggctt tgaatggaat tatccactag aggagccgac cactgagcca 600

ccagttaatc tcacatactc agcaaactca cccgtgggtc gctagggtgg 650

ggtatggggc catccgagct gaggccatct gtgtggtggt ggctgatggt 700

actggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa 750

gcttctgcag aaaa 764
```

<210> 258
<211> 178
<212> PRT
<213> Homosapiens

<400> 258

```
Met His Arg Pro Glu Ala Met Leu Leu Leu Leu Thr Leu Ala Leu
  1               5                  10                  15

Leu Gly Gly Pro Thr Trp Ala Gly Lys Met Tyr Gly Pro Gly Gly
                20                  25                  30

Gly Lys Tyr Phe Ser Thr Thr Glu Asp Tyr Asp His Glu Ile Thr
                35                  40                  45

Gly Leu Arg Val Ser Val Gly Leu Leu Leu Val Lys Ser Val Gln
                50                  55                  60

Val Lys Leu Gly Asp Ser Trp Asp Val Lys Leu Gly Ala Leu Gly
                65                  70                  75

Gly Asn Thr Gln Glu Val Thr Leu Gln Pro Gly Glu Tyr Ile Thr
                80                  85                  90

Lys Val Phe Val Ala Phe Gln Ala Phe Leu Arg Gly Met Val Met
                95                 100                 105

Tyr Thr Ser Lys Asp Arg Tyr Phe Tyr Phe Gly Lys Leu Asp Gly
               110                 115                 120

Gln Ile Ser Ser Ala Tyr Pro Ser Gln Glu Gly Gln Val Leu Val
               125                 130                 135

Gly Ile Tyr Gly Gln Tyr Gln Leu Leu Gly Ile Lys Ser Ile Gly
               140                 145                 150

Phe Glu Trp Asn Tyr Pro Leu Glu Glu Pro Thr Thr Glu Pro Pro
               155                 160                 165

Val Asn Leu Thr Tyr Ser Ala Asn Ser Pro Val Gly Arg
               170                 175
```

<210> 259
<211> 798
<212> DNA
<213> Homosapiens

<220>
<221> unsure

<222> 794
<223> unknown base

<400> 259
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cagacatggc tcagtcactg gctctgagcc tccttatcct ggttctggcc 50

tttggcatcc ccaggaccca aggcagtgat ggaggggctc aggactgttg 100

cctcaagtac agccaaagga agattcccgc caaggttgtc cgcagctacc 150

ggaagcagga accaagctta ggctgctcca tcccagctat cctgttcttg 200

ccccgcaagc gctctcaggc agagctatgt gcagacccaa aggagctctg 250

ggtgcagcag ctgatgcagc atctggacaa gacaccatcc ccacagaaac 300

cagcccaggg ctgcaggaag gacagggggg cctccaagac tggcaagaaa 350

ggaaagggct ccaaaggctg caagaggact gagcggtcac agacccctaa 400

agggccatag cccagtgagc agcctggagc cctggagacc ccaccagcct 450

caccagcgct tgaagcctga acccaagatg caagaaggag gctatgctca 500

ggggccctgg agcagccacc ccatgctggc cttgccacac tctttctcct 550

gctttaacca ccccatctgc attcccagct ctaccctgca tggctgagct 600

gcccacagca ggccaggtcc agagagaccg aggagggaga gtctcccagg 650

gagcatgaga ggaggcagca ggactgtccc cttgaaggag aatcatcagg 700

accctggacc tgatacggct ccccagtaca ccccacctct tccttgtaaa 750

tatgatttat acctaactga ataaaaagct gttctgtctt cccnccca 798
```

<210> 260
<211> 134
<212> PRT
<213> Homosapiens

<400> 260
```
Met Ala Gln Ser Leu Ala Leu Ser Leu Leu Ile Leu Val Leu Ala
 1               5                  10                  15

Phe Gly Ile Pro Arg Thr Gln Gly Ser Asp Gly Gly Ala Gln Asp
                20                  25                  30

Cys Cys Leu Lys Tyr Ser Gln Arg Lys Ile Pro Ala Lys Val Val
                    35                  40                  45

Arg Ser Tyr Arg Lys Gln Glu Pro Ser Leu Gly Cys Ser Ile Pro
                50                  55                  60

Ala Ile Leu Phe Leu Pro Arg Lys Arg Ser Gln Ala Glu Leu Cys
                    65                  70                  75

Ala Asp Pro Lys Glu Leu Trp Val Gln Gln Leu Met Gln His Leu
                80                  85                  90

Asp Lys Thr Pro Ser Pro Gln Lys Pro Ala Gln Gly Cys Arg Lys
                    95                  100                 105
```

```
Asp Arg Gly Ala Ser Lys Thr Gly Lys Lys Gly Lys Gly Ser Lys
            110                 115                 120

Gly Cys Lys Arg Thr Glu Arg Ser Gln Thr Pro Lys Gly Pro
            125                 130
```

<210> 261
<211> 3554
<212> DNA
<213> Homosapiens

<400> 261

```
gggactacaa gccgcgccgc gctgccgctg gcccctcagc aaccctcgac 50

atggcgctga ggcggccacc gcgactccgg ctctgcgctc ggctgcctga 100

cttcttcctg ctgctgcttt tcaggggctg cctgataggg gctgtaaatc 150

tcaaatccag caatcgaacc ccagtggtac aggaatttga aagtgtggaa 200

ctgtcttgca tcattacgga ttcgcagaca agtgacccca ggatcgagtg 250

gaagaaaatt caagatgaac aaaccacata tgtgtttttt gacaacaaaa 300

ttcagggaga cttggcgggt cgtgcagaaa tactggggaa gacatccctg 350

aagatctgga atgtgacacg gagagactca gccctttatc gctgtgaggt 400

cgttgctcga aatgaccgca aggaaattga tgagattgtg atcgagttaa 450

ctgtgcaagt gaagccagtg acccctgtct gtagagtgcc gaaggctgta 500

ccagtaggca agatggcaac actgcactgc caggagagtg agggccaccc 550

ccggcctcac tacagctggt atcgcaatga tgtaccactg cccacggatt 600

ccagagccaa tcccagattt cgcaattctt ctttccactt aaactctgaa 650

acaggcactt tggtgttcac tgctgttcac aaggacgact ctgggcagta 700

ctactgcatt gcttccaatg acgcaggctc agccaggtgt gaggagcagg 750

agatggaagt ctatgacctg aacattggcg gaattattgg gggggttctg 800

gttgtccttg ctgtactggc cctgatcacg ttgggcatct gctgtgcata 850

cagacgtggc tacttcatca acaataaaca ggatggagaa agttacaaga 900

acccagggaa accagatgga gttaactaca tccgcactga cgaggagggc 950

gacttcagac acaagtcatc gtttgtgatc tgagacccgc ggtgtggctg 1000

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ttttcgtttt ggccaaagtt gaccactact cttcttactc taacaagcca 1150

catgaataga agaattttcc tcaagatgga cccggtaaat ataaccacaa 1200

ggaagcgaaa ctgggtgcgt tcactgagtt gggttcctaa tctgtttctg 1250

gcctgattcc cgcatgagta ttagggtgat cttaaagagt ttgctcacgt 1300
```

```
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agcagcgcat cccggcggga acccagaaaa ggcttcttac acagcagcct 1450

tacttcatcg gcccacagac accaccgcag tttcttctta aaggctctgc 1500

tgatcggtgt tgcagtgtcc attgtggaga agctttttgg atcagcattt 1550

tgtaaaaaca accaaaatca ggaaggtaaa ttggttgctg gaagagggat 1600

cttgcctgag gaaccctgct tgtccaacag ggtgtcagga tttaaggaaa 1650

accttcgtct taggctaagt ctgaaatggt actgaaatat gcttttctat 1700

gggtcttgtt tattttataa aattttacat ctaaattttt gctaaggatg 1750

tattttgatt attgaaaaga aaatttctat ttaaactgta aatatattgt 1800

catacaatgt taaataacct attttttttaa aaaagttcaa cttaaggtag 1850

aagttccaag ctactagtgt taaattggaa aatatcaata attaagagta 1900

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cacacaagtt ttagcctttt tcacaaggga actcatactg tctacacatc 2000

agaccatagt tgcttaggaa acctttaaaa attccagtta agcaatgttg 2050

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aaagaacgtc aggtggagca gccaggtgaa aggcctggcg gggaggaaag 2700

tgaaacgcct gaatcaaaag cagttttcta attttgactt taaattttttc 2750

atccgccgga gacactgctc ccatttgtgg ggggacatta gcaacatcac 2800

tcagaagcct gtgttcttca agagcaggtg ttctcagcct cacatgccct 2850

gccgtgctgg actcaggact gaagtgctgt aaagcaagga gctgctgaga 2900
```

310

```
aggagcactc cactgtgtgc ctggagaatg gctctcacta ctcaccttgt 2950

ctttcagctt ccagtgtctt gggttttta tactttgaca gcttttttt 3000

aattgcatac atgagactgt gttgacttt tttagttatg tgaaacactt 3050

tgccgcaggc cgcctggcag aggcaggaaa tgctccagca gtggctcagt 3100

gctccctggt gtctgctgca tggcatcctg gatgcttagc atgcaagttc 3150

cctccatcat tgccaccttg gtagagaggg atggctcccc accctcagcg 3200

ttggggattc acgctccagc ctccttcttg gttgtcatag tgatagggta 3250

gccttattgc ccctcttct tatacccta aaccttctac actagtgcca 3300

tgggaaccag gtctgaaaa gtagagagaa gtgaaagtag agtctgggaa 3350

gtagctgcct ataactgaga ctagacggaa aaggaatact cgtgtatttt 3400

aagatatgaa tgtgactcaa gactcgaggc cgatacgagg ctgtgattct 3450

gcctttggat ggatgttgct gtacacagat gctacagact tgtactaaca 3500

caccgtaatt tggcatttgt ttaacctcat ttataaaagc ttcaaaaaaa 3550

ccca 3554
```

<210> 262
<211> 310
<212> PRT
<213> Homosapiens

<400> 262
```
Met Ala Leu Arg Arg Pro Pro Arg Leu Arg Leu Cys Ala Arg Leu
1               5               10              15

Pro Asp Phe Phe Leu Leu Leu Leu Phe Arg Gly Cys Leu Ile Gly
            20              25              30

Ala Val Asn Leu Lys Ser Ser Asn Arg Thr Pro Val Val Gln Glu
            35              40              45

Phe Glu Ser Val Glu Leu Ser Cys Ile Ile Thr Asp Ser Gln Thr
            50              55              60

Ser Asp Pro Arg Ile Glu Trp Lys Lys Ile Gln Asp Glu Gln Thr
            65              70              75

Thr Tyr Val Phe Phe Asp Asn Lys Ile Gln Gly Asp Leu Ala Gly
            80              85              90

Arg Ala Glu Ile Leu Gly Lys Thr Ser Leu Lys Ile Trp Asn Val
            95              100             105

Thr Arg Arg Asp Ser Ala Leu Tyr Arg Cys Glu Val Val Ala Arg
            110             115             120

Asn Asp Arg Lys Glu Ile Asp Glu Ile Val Ile Glu Leu Thr Val
            125             130             135

Gln Val Lys Pro Val Thr Pro Val Cys Arg Val Pro Lys Ala Val
            140             145             150
```

311

```
Pro Val Gly Lys Met Ala Thr Leu His Cys Gln Glu Ser Glu Gly
                155                 160                 165

His Pro Arg Pro His Tyr Ser Trp Tyr Arg Asn Asp Val Pro Leu
                170                 175                 180

Pro Thr Asp Ser Arg Ala Asn Pro Arg Phe Arg Asn Ser Ser Phe
                185                 190                 195

His Leu Asn Ser Glu Thr Gly Thr Leu Val Phe Thr Ala Val His
                200                 205                 210

Lys Asp Asp Ser Gly Gln Tyr Tyr Cys Ile Ala Ser Asn Asp Ala
                215                 220                 225

Gly Ser Ala Arg Cys Glu Glu Gln Glu Met Glu Val Tyr Asp Leu
                230                 235                 240

Asn Ile Gly Gly Ile Ile Gly Gly Val Leu Val Val Leu Ala Val
                245                 250                 255

Leu Ala Leu Ile Thr Leu Gly Ile Cys Cys Ala Tyr Arg Arg Gly
                260                 265                 270

Tyr Phe Ile Asn Asn Lys Gln Asp Gly Glu Ser Tyr Lys Asn Pro
                275                 280                 285

Gly Lys Pro Asp Gly Val Asn Tyr Ile Arg Thr Asp Glu Glu Gly
                290                 295                 300

Asp Phe Arg His Lys Ser Ser Phe Val Ile
                305                 310
```

```
<210> 263
<211> 2570
<212> DNA
<213> Homosapiens

<400> 263
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agagaagcaa agcgcaacgg tgtggtccaa gccgggggctt ctgcttcgcc 100

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tcgaagtctt gaactccagc cccgcacatc cacgcgcggc acaggcgcgg 200

caggcggcag gtcccggccg aaggcgatgc gcgcaggggg tcgggcagct 250

gggctcgggc ggcgggagta gggcccggca gggaggcagg gaggctgcat 300

attcagagtc gcgggctgcg ccctgggcag aggccgccct cgctccacgc 350

aacacctgct gctgccaccg cgccgcgatg agccgcgtgg tctcgctgct 400

gctgggcgcc gcgctgctct gcggccacgg agccttctgc cgccgcgtgg 450

tcagcggcca aaaggtgtgt tttgctgact tcaagcatcc ctgctacaaa 500

atggcctact tccatgaact gtccagccga gtgagctttc aggaggcacg 550

cctggcttgt gagagtgagg gaggagtcct cctcagcctt gagaatgaag 600
```

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cagaacagaa gttaatagag agcatgttgc aaaacctgac aaaacccggg 650

acagggattt ctgatggtga tttctggata gggctttgga ggaatggaga 700

tgggcaaaca tctggtgcct gcccagatct ctaccagtgg tctgatggaa 750

gcaattccca gtaccgaaac tggtacacag atgaaccttc ctgcggaagt 800

gaaaagtgtg ttgtgatgta tcaccaacca actgccaatc ctggccttgg 850

gggtccctac ctttaccagt ggaatgatga caggtgtaac atgaagcaca 900

attatatttg caagtatgaa ccagagatta atccaacagc ccctgtagaa 950

aagccttatc ttacaaatca accaggagac acccatcaga atgtggttgt 1000

tactgaagca ggtataattc ccaatctaat ttatgttgtt ataccaacaa 1050

taccccctgct cttactgata ctggttgctt ttggaacctg ttgtttccag 1100

atgctgcata aaagtaaagg aagaacaaaa actagtccaa accagtctac 1150

actgtggatt tcaaagagta ccagaaaaga aagtggcatg gaagtataat 1200

aactcattga cttggttcca gaattttgta attctggatc tgtataagga 1250

atggcatcag aacaatagct tggaatggct tgaaatcaca aaggatctgc 1300

aagatgaact gtaagctccc ccttgaggca aatattaaag taatttttat 1350

atgtctatta tttcatttaa agaatatgct gtgctaataa tggagtgaga 1400

catgcttatt ttgctaaagg atgcacccaa acttcaaact tcaagcaaat 1450

gaaatggaca atgcagataa agttgttatc aacacgtcgg gagtatgtgt 1500

gttagaagca attccttta tttctttcac ctttcataag ttgttatcta 1550

gtcaatgtaa tgtatattgt attgaaattt acagtgtgca aaagtatttt 1600

acctttgcat aagtgtttga taaaaatgaa ctgttctaat atttatttt 1650

atggcatctc atttttcaat acatgctctt ttgattaaag aaacttatta 1700

ctgttgtcaa ctgaattcac acacacaa atatagtacc atagaaaaag 1750

tttgttttct cgaaataatt catctttcag cttctctgct tttggtcaat 1800

gtctaggaaa tctcttcaga aataagaagc tatttcatta agtgtgatat 1850

aaacctcctc aaacatttta cttagaggca aggattgtct aatttcaatt 1900

gtgcaagaca tgtgccttat aattatttt agcttaaaat taaacagatt 1950

ttgtaataat gtaactttgt aataggtgc ataaacacta atgcagtcaa 2000

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ttgcctatat aatgagaagc agctctctga gggttctgaa atcaatgtgg 2100

tccctctctt gcccactaaa caaagatggt tgttcggggt ttgggattga 2150

cactggaggc agatagttgc aaagttagtc taaggtttcc ctagctgtat 2200
```

313

```
ttagcctctg actatattag tatacaaaga ggtcatgtgg ttgagaccag 2250

gtgaatagtc actatcagtg tggagacaag cacagcacac agacatttta 2300

ggaaggaaag gaactacgaa atcgtgtgaa aatgggttgg aacccatcag 2350

tgatcgcata ttcattgatg agggtttgct tgagatagaa aatggtggct 2400

cctttctgtc ttatctccta gtttcttcaa tgcttacgcc ttgttcttct 2450

caagagaaag ttgtaactct ctggtcttca tatgtccctg tgctcctttt 2500

aaccaaataa agagttcttg tttctggggg aaaaaaaaaa aaaaaaaaaa 2550

aaaaaaaaaa aaaaaaaaaa 2570
```

```
<210> 264
<211> 273
<212> PRT
<213> Homosapiens

<400> 264
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```
Met Ser Arg Val Val Ser Leu Leu Leu Gly Ala Ala Leu Leu Cys
 1               5                  10                  15

Gly His Gly Ala Phe Cys Arg Arg Val Val Ser Gly Gln Lys Val
                20                  25                  30

Cys Phe Ala Asp Phe Lys His Pro Cys Tyr Lys Met Ala Tyr Phe
                35                  40                  45

His Glu Leu Ser Ser Arg Val Ser Phe Gln Glu Ala Arg Leu Ala
                50                  55                  60

Cys Glu Ser Glu Gly Gly Val Leu Leu Ser Leu Glu Asn Glu Ala
                65                  70                  75

Glu Gln Lys Leu Ile Glu Ser Met Leu Gln Asn Leu Thr Lys Pro
                80                  85                  90

Gly Thr Gly Ile Ser Asp Gly Asp Phe Trp Ile Gly Leu Trp Arg
                95                  100                 105

Asn Gly Asp Gly Gln Thr Ser Gly Ala Cys Pro Asp Leu Tyr Gln
                110                 115                 120

Trp Ser Asp Gly Ser Asn Ser Gln Tyr Arg Asn Trp Tyr Thr Asp
                125                 130                 135

Glu Pro Ser Cys Gly Ser Glu Lys Cys Val Val Met Tyr His Gln
                140                 145                 150

Pro Thr Ala Asn Pro Gly Leu Gly Gly Pro Tyr Leu Tyr Gln Trp
                155                 160                 165

Asn Asp Asp Arg Cys Asn Met Lys His Asn Tyr Ile Cys Lys Tyr
                170                 175                 180

Glu Pro Glu Ile Asn Pro Thr Ala Pro Val Glu Lys Pro Tyr Leu
                185                 190                 195

Thr Asn Gln Pro Gly Asp Thr His Gln Asn Val Val Val Thr Glu
```

314

```
               200                 205                 210
  Ala Gly Ile Ile Pro Asn Leu Ile Tyr Val Val Ile Pro Thr Ile
                  215             220             225

  Pro Leu Leu Leu Leu Ile Leu Val Ala Phe Gly Thr Cys Cys Phe
                  230             235             240

  Gln Met Leu His Lys Ser Lys Gly Arg Thr Lys Thr Ser Pro Asn
                  245             250             255

  Gln Ser Thr Leu Trp Ile Ser Lys Ser Thr Arg Lys Glu Ser Gly
                  260             265             270

  Met Glu Val
```

<210> 265
<211> 3824
<212> DNA
<213> Homosapiens

<400> 265
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gtctgtctgc tcctggcatg ccctgccaca gccactgggc ccgaagttgc 100

tcagcctgaa gtagacacca ccctgggtcg tgtgcgaggc cggcaggtgg 150

gcgtgaaggg cacagaccgc cttgtgaatg tctttctggg cattccattt 200

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gccctgggag ggtgtgcggg atgccagcac tgcgcccca atgtgcctac 300

aagacgtgga gagcatgaac agcagcagat ttgtcctcaa cggaaaacag 350

cagatcttct ccgtttcaga ggactgcctg gtcctcaacg tctatagccc 400

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gctgcctatg gggatgtggt cgtggttaca gtccagtacc gccttggggt 550

ccttggcttc ttcagcactg gagatgagca tgcacctggc aaccagggct 600

tcctagatgt ggtagctgct ttgcgctggg tgcaagaaaa catcgccccc 650

ttcggggtg acctcaactg tgtcactgtc tttggtggat ctgccggtgg 700

gagcatcatc tctggcctgg tcctgtcccc agtggctgca gggctgttcc 750

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tctcacccTT ggcccctagc tcagaaaatc gcaaacacct ggcctgcag 850

ctccagctcc ccggctgaga tggtgcagtg ccttcagcag aaagaaggag 900

aagagctggt ccttagcaag aagctgaaaa atactatcta tcctctcacc 950

gttgatggca ctgtcttccc caaaagcccc aaggaactcc tgaaggagaa 1000
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agccgggagg acatgctggc catctcaaca cccgtcttga ccagtctgga 1150

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tccagaggcc acagaggagg agaagcagct aagcctcacc atgatggccc 1500

agtggaccca ctttgcccgg acagggacc ccaatagcaa ggctctgcct 1550

ccttggcccc aattcaacca ggcggaacaa tatctggaga tcaacccagt 1600

gccacgggcc ggacagaagt tcagggaggc ctggatgcag ttctggtcag 1650

agacgctccc cagcaagata caacagtggc accagaagca gaagaacagg 1700

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cagacctgac cctcaccaat tccagcccct gaccctcagg acgctggatg 2550

ccagctccca gccccagtgc cgggtcctcc ctcccttcct ggcttgggga 2600
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aggccagggg agggcatctg gaccagggca tccgtcgggc tattgtcaca 2700

gagaaaagaa gagacccacc cactcgggct gcaaaaggtg aaaagcacca 2750

agaggttttc agatggaagt gagaggtgac agtgtgctgg cagccctcac 2800

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tgtaaacaca ccaatcagca ccctgtgtct agctcagtgt ttgtgaatgc 3500

accaatccac actctgtatc tggctactct ggtggggact tggagaacct 3550

ttgtgtccac actctgtatc tagctaatct agtggggatg tggagaacct 3600

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ggcgagacaa gagaataaaa gcaggctgcc tgagccagca gtgacaaccc 3750

ccctcgggtc ccctcccacg ccgtggaagc tttgttcttt cgctctttgc 3800

aataaatctt gctactgccc aaaa 3824
```

```
<210> 266
<211> 571
<212> PRT
<213> Homosapiens

<400> 266
 Met Glu Arg Ala Val Arg Val Glu Ser Gly Val Leu Val Gly Val
  1               5                  10                  15

 Val Cys Leu Leu Leu Ala Cys Pro Ala Thr Ala Thr Gly Pro Glu
                 20                  25                  30

 Val Ala Gln Pro Glu Val Asp Thr Thr Leu Gly Arg Val Arg Gly
```

317

```
                35                          40                          45
Arg Gln Val Gly Val Lys Gly Thr Asp Arg Leu Val Asn Val Phe
                50                          55                          60
Leu Gly Ile Pro Phe Ala Gln Pro Pro Leu Gly Pro Asp Arg Phe
                65                          70                          75
Ser Ala Pro His Pro Ala Gln Pro Trp Glu Gly Val Arg Asp Ala
                80                          85                          90
Ser Thr Ala Pro Pro Met Cys Leu Gln Asp Val Glu Ser Met Asn
                95                         100                         105
Ser Ser Arg Phe Val Leu Asn Gly Lys Gln Gln Ile Phe Ser Val
               110                         115                         120
Ser Glu Asp Cys Leu Val Leu Asn Val Tyr Ser Pro Ala Glu Val
               125                         130                         135
Pro Ala Gly Ser Gly Arg Pro Val Met Val Trp Val His Gly Gly
               140                         145                         150
Ala Leu Ile Thr Gly Ala Ala Thr Ser Tyr Asp Gly Ser Ala Leu
               155                         160                         165
Ala Ala Tyr Gly Asp Val Val Val Val Thr Val Gln Tyr Arg Leu
               170                         175                         180
Gly Val Leu Gly Phe Phe Ser Thr Gly Asp Glu His Ala Pro Gly
               185                         190                         195
Asn Gln Gly Phe Leu Asp Val Val Ala Ala Leu Arg Trp Val Gln
               200                         205                         210
Glu Asn Ile Ala Pro Phe Gly Gly Asp Leu Asn Cys Val Thr Val
               215                         220                         225
Phe Gly Gly Ser Ala Gly Gly Ser Ile Ile Ser Gly Leu Val Leu
               230                         235                         240
Ser Pro Val Ala Ala Gly Leu Phe His Arg Ala Ile Thr Gln Ser
               245                         250                         255
Gly Val Ile Thr Thr Pro Gly Ile Ile Asp Ser His Pro Trp Pro
               260                         265                         270
Leu Ala Gln Lys Ile Ala Asn Thr Leu Ala Cys Ser Ser Ser Ser
               275                         280                         285
Pro Ala Glu Met Val Gln Cys Leu Gln Gln Lys Glu Gly Glu Glu
               290                         295                         300
Leu Val Leu Ser Lys Lys Leu Lys Asn Thr Ile Tyr Pro Leu Thr
               305                         310                         315
Val Asp Gly Thr Val Phe Pro Lys Ser Pro Lys Glu Leu Leu Lys
               320                         325                         330
Glu Lys Pro Phe His Ser Val Pro Phe Leu Met Gly Val Asn Asn
               335                         340                         345
His Glu Phe Ser Trp Leu Ile Pro Arg Gly Trp Gly Leu Leu Asp
```

Thr Met Glu Gln Met Ser Arg Glu Asp Met Leu Ala Ile Ser Thr
                365                      370                  375

Pro Val Leu Thr Ser Leu Asp Val Pro Pro Glu Met Met Pro Thr
                380                      385                  390

Val Ile Asp Glu Tyr Leu Gly Ser Asn Ser Asp Ala Gln Ala Lys
                395                      400                  405

Cys Gln Ala Phe Gln Glu Phe Met Gly Asp Val Phe Ile Asn Val
                410                      415                  420

Pro Thr Val Ser Phe Ser Arg Tyr Leu Arg Asp Ser Gly Ser Pro
                425                      430                  435

Val Phe Phe Tyr Glu Phe Gln His Arg Pro Ser Ser Phe Ala Lys
                440                      445                  450

Ile Lys Pro Ala Trp Val Lys Ala Asp His Gly Ala Glu Gly Ala
                455                      460                  465

Phe Val Phe Gly Gly Pro Phe Leu Met Asp Glu Ser Ser Arg Leu
                470                      475                  480

Ala Phe Pro Glu Ala Thr Glu Glu Glu Lys Gln Leu Ser Leu Thr
                485                      490                  495

Met Met Ala Gln Trp Thr His Phe Ala Arg Thr Gly Asp Pro Asn
                500                      505                  510

Ser Lys Ala Leu Pro Pro Trp Pro Gln Phe Asn Gln Ala Glu Gln
                515                      520                  525

Tyr Leu Glu Ile Asn Pro Val Pro Arg Ala Gly Gln Lys Phe Arg
                530                      535                  540

Glu Ala Trp Met Gln Phe Trp Ser Glu Thr Leu Pro Ser Lys Ile
                545                      550                  555

Gln Gln Trp His Gln Lys Gln Lys Asn Arg Lys Ala Gln Glu Asp
                560                      565                  570

Leu


<210> 267
<211> 3721
<212> DNA
<213> Homosapiens

<400> 267
 tgtcgcctgg ccctcgccat gcagaccccg cgagcgtccc ctccccgccc 50

 ggccctcctg cttctgctgc tgctactggg gggcgcccac ggcctctttc 100

 ctgaggagcc gccgccgctt agcgtggccc ccagggacta cctgaaccac 150

 tatcccgtgt ttgtgggcag cgggcccgga cgcctgaccc ccgcagaagg 200

 tgctgacgac ctcaacatcc agcgagtcct gcgggtcaac aggacgctgt 250

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tcattggggga    cagggacaac    ctctaccgcg    tagagctgga    gcccccacg     300

tccacggagc    tgcggtacca    gaggaagctg    acctggagat    ctaaccccag    350

cgacataaac    gtgtgtcgga    tgaagggcaa    acaggagggc    gagtgtcgaa    400

acttcgtaaa    ggtgctgctc    cttcgggacg    agtccacgct    ctttgtgtgc    450

ggttccaacg    ccttcaaccc    ggtgtgcgcc    aactacagca    tagacaccct    500

gcagcccgtc    ggagacaaca    tcagcggtat    ggcccgctgc    ccgtacgacc    550

ccaagcacgc    caatgttgcc    ctcttctctg    acgggatgct    cttcacagct    600

actgttaccg    acttcctagc    cattgatgct    gtcatctacc    gcagcctcgg    650

ggacaggccc    accctgcgca    ccgtgaaaca    tgactccaag    tggttcaaag    700

agccttactt    tgtccatgcg    gtggagtggg    gcagccatgt    ctacttcttc    750

ttccgggaga    ttgcgatgga    gtttaactac    ctggagaagg    tggtggtgtc    800

ccgcgtggcc    cgagtgtgca    agaacgacgt    gggaggctcc    ccccgcgtgc    850

tggagaagca    gtggacgtcc    ttcctgaagg    cgcggctcaa    ctgctctgta    900

cccggagact    cccatttcta    cttcaacgtg    ctgcaggctg    tcacgggcgt    950

ggtcagcctc    gggggccggc    ccgtggtcct    ggccgttttt    tccacgccca    1000

gcaacagcat    ccctggctcg    gctgtctgcg    cctttgacct    gacacaggtg    1050

gcagctgtgt    ttgaaggccg    cttccgagag    cagaagtccc    ccgagtccat    1100

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gcgcagcccc    cgggatgcag    tacaatgcct    ccagcgcctt    gccggatgac    1200

atcctcaact    ttgtcaagac    ccaccctctg    atggacgagg    cggtgccctc    1250

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ctcgagtggc    tgtggacgtg    ggagccggcc    cctggggcaa    ccagaccgtt    1350

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agtactcggg    gtgtatgaag    aactgtatcg    gcagtcagga    cccctactgc    1650

gggtgggccc    ccgacggctc    ctgcatcttc    ctcagcccgg    gcaccagagc    1700

cgcctttgag    caggacgtgt    ccggggccag    cacctcaggc    ttaggggact    1750

gcacaggact    cctgcgggcc    agcctctccg    aggaccgcgc    ggggctggtg    1800

tcggtgaacc    tgctggtaac    gtcgtcggtg    cggccttcg     tggtgggagc    1850
```

```
cgtggtgtcc ggcttcagcg tgggctggtt cgtgggcctc cgtgagcggc 1900

gggagctggc ccggcgcaag gacaaggagg ccatcctggc gcacggggcg 1950

ggcgaggcgg tgctgagcgt cagccgcctg ggcgagcgca gggcgcaggg 2000

tcccgggggc cggggcggag gcggtggcgg tggcgccggg gttcccccgg 2050

aggccctgct ggcgcccctg atgcagaacg gctgggccaa ggccacgctg 2100

ctgcagggcg ggccccacga cctggactcg gggctgctgc ccacgcccga 2150

gcagacgccg ctgccgcaga agcgcctgcc cactccgcac ccgcaccccc 2200

acgccctggg cccccgcgcc tgggaccacg gccacccccct gctcccggcc 2250

tccgcttcat cctccctcct gctgctggcg cccgcccggg cccccgagca 2300

gcccccgcg cctggggagc cgaccccga cggccgcctc tatgctgccc 2350

ggcccggccg cgcctcccac ggcgacttcc cgctcacccc ccacgccagc 2400

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gcctgaggag gccactgggc ccccacgccc ctccggccgc caccctgcgc 2550

cgcacccaca cgttcaacag cggcgaggcc cggcctgggg accgccaccg 2600

cggctgccac gcccggccgg gcacagactt ggcccacctc ctcccctatg 2650

gggggcgga caggactgcg ccccccgtgc cctaggccgg gggcccccg 2700

atgccttggc agtgccagcc acgggaacca ggagcgagag acggtgccag 2750

aacgccgggg cccggggcaa ctccgagtgg gtgctcaagt ccccccgcg 2800

acccacccgc ggagtggggg gccccctccg ccacaaggaa gcacaaccag 2850

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aggttttggt ttttttttgc agttttggtt tcttttgcgg ttttctaacc 3000

aattgcacaa ctccgttctc ggggtggcgg caggcagggg aggcttggac 3050

gccggtgggg aatggggggc cacagctgca gacctaagcc ctcccccacc 3100

cctggaaagg tccctcccca acccaggccc ctggcgtgtg tgggtgtgcg 3150

tgcgtgtgcg tgccgtgttc gtgtgcaagg ggccggggag gtgggcgtgt 3200

gtgtgcgtgc cagcgaaggc tgctgtgggc gtgtgtgtca agtgggccac 3250

gcgtgcaggg tgtgtgtcca cgagcgacga tcgtggtggc cccagcggcc 3300

tgggcgttgg ctgagccgac gctggggctt ccagaaggcc cgggggtctc 3350

cgaggtgccg gttaggagtt tgaacccccc ccactctgca gagggaagcg 3400

gggacaatgc cggggtttca ggcaggagac acgaggaggg cctgcccgga 3450
```

```
agtcacatcg gcagcagctg tctaaagggc ttggggggcct gggggggcggc 3500

gaaggtgggt ggggcccctc tgtaaatacg gccccagggt ggtgagagag 3550

tcccatgcca cccgtcccct tgtgacctcc cccctatgac ctccagctga 3600

ccatgcatgc cacgtggctg gctgggtcct ctgccctctt tggagtttgc 3650

ctcccccagc cccctccccca tcaataaaac tctgtttaca accaaaaaaa 3700

aaaaaaaaaa aaaaaaaaaa a 3721
```

<210> 268
<211> 888
<212> PRT
<213> Homosapiens

<400> 268

```
Met Gln Thr Pro Arg Ala Ser Pro Pro Arg Pro Ala Leu Leu Leu
 1               5                  10                  15

Leu Leu Leu Leu Leu Gly Gly Ala His Gly Leu Phe Pro Glu Glu
                20                  25                  30

Pro Pro Pro Leu Ser Val Ala Pro Arg Asp Tyr Leu Asn His Tyr
                35                  40                  45

Pro Val Phe Val Gly Ser Gly Pro Gly Arg Leu Thr Pro Ala Glu
                50                  55                  60

Gly Ala Asp Asp Leu Asn Ile Gln Arg Val Leu Arg Val Asn Arg
                65                  70                  75

Thr Leu Phe Ile Gly Asp Arg Asp Asn Leu Tyr Arg Val Glu Leu
                80                  85                  90

Glu Pro Pro Thr Ser Thr Glu Leu Arg Tyr Gln Arg Lys Leu Thr
                95                  100                 105

Trp Arg Ser Asn Pro Ser Asp Ile Asn Val Cys Arg Met Lys Gly
                110                 115                 120

Lys Gln Glu Gly Glu Cys Arg Asn Phe Val Lys Val Leu Leu Leu
                125                 130                 135

Arg Asp Glu Ser Thr Leu Phe Val Cys Gly Ser Asn Ala Phe Asn
                140                 145                 150

Pro Val Cys Ala Asn Tyr Ser Ile Asp Thr Leu Gln Pro Val Gly
                155                 160                 165

Asp Asn Ile Ser Gly Met Ala Arg Cys Pro Tyr Asp Pro Lys His
                170                 175                 180

Ala Asn Val Ala Leu Phe Ser Asp Gly Met Leu Phe Thr Ala Thr
                185                 190                 195

Val Thr Asp Phe Leu Ala Ile Asp Ala Val Ile Tyr Arg Ser Leu
                200                 205                 210

Gly Asp Arg Pro Thr Leu Arg Thr Val Lys His Asp Ser Lys Trp
                215                 220                 225
```

322

```
Phe Lys Glu Pro Tyr Phe Val His Ala Val Glu Trp Gly Ser His
                230             235                 240

Val Tyr Phe Phe Phe Arg Glu Ile Ala Met Glu Phe Asn Tyr Leu
                245             250                 255

Glu Lys Val Val Val Ser Arg Val Ala Arg Val Cys Lys Asn Asp
                260             265                 270

Val Gly Gly Ser Pro Arg Val Leu Glu Lys Gln Trp Thr Ser Phe
                275             280                 285

Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp Ser His Phe
                290             295                 300

Tyr Phe Asn Val Leu Gln Ala Val Thr Gly Val Val Ser Leu Gly
                305             310                 315

Gly Arg Pro Val Val Leu Ala Val Phe Ser Thr Pro Ser Asn Ser
                320             325                 330

Ile Pro Gly Ser Ala Val Cys Ala Phe Asp Leu Thr Gln Val Ala
                335             340                 345

Ala Val Phe Glu Gly Arg Phe Arg Glu Gln Lys Ser Pro Glu Ser
                350             355                 360

Ile Trp Thr Pro Val Pro Glu Asp Gln Val Pro Arg Pro Arg Pro
                365             370                 375

Gly Cys Cys Ala Ala Pro Gly Met Gln Tyr Asn Ala Ser Ser Ala
                380             385                 390

Leu Pro Asp Asp Ile Leu Asn Phe Val Lys Thr His Pro Leu Met
                395             400                 405

Asp Glu Ala Val Pro Ser Leu Gly His Ala Pro Trp Ile Leu Arg
                410             415                 420

Thr Leu Met Arg His Gln Leu Thr Arg Val Ala Val Asp Val Gly
                425             430                 435

Ala Gly Pro Trp Gly Asn Gln Thr Val Val Phe Leu Gly Ser Glu
                440             445                 450

Ala Gly Thr Val Leu Lys Phe Leu Val Arg Pro Asn Ala Ser Thr
                455             460                 465

Ser Gly Thr Ser Gly Leu Ser Val Phe Leu Glu Glu Phe Glu Thr
                470             475                 480

Tyr Arg Pro Asp Arg Cys Gly Arg Pro Gly Gly Gly Glu Thr Gly
                485             490                 495

Gln Arg Leu Leu Ser Leu Glu Leu Asp Ala Ala Ser Gly Gly Leu
                500             505                 510

Leu Ala Ala Phe Pro Arg Cys Val Val Arg Val Pro Val Ala Arg
                515             520                 525

Cys Gln Gln Tyr Ser Gly Cys Met Lys Asn Cys Ile Gly Ser Gln
                530             535                 540
```

323

```
Asp Pro Tyr Cys Gly Trp Ala Pro Asp Gly Ser Cys Ile Phe Leu
              545             550                         555

Ser Pro Gly Thr Arg Ala Ala Phe Glu Gln Asp Val Ser Gly Ala
              560             565                         570

Ser Thr Ser Gly Leu Gly Asp Cys Thr Gly Leu Leu Arg Ala Ser
              575             580                         585

Leu Ser Glu Asp Arg Ala Gly Leu Val Ser Val Asn Leu Leu Val
              590             595                         600

Thr Ser Ser Val Ala Ala Phe Val Val Gly Ala Val Val Ser Gly
              605             610                         615

Phe Ser Val Gly Trp Phe Val Gly Leu Arg Glu Arg Arg Glu Leu
              620             625                         630

Ala Arg Arg Lys Asp Lys Glu Ala Ile Leu Ala His Gly Ala Gly
              635             640                         645

Glu Ala Val Leu Ser Val Ser Arg Leu Gly Glu Arg Arg Ala Gln
              650             655                         660

Gly Pro Gly Gly Arg Gly Gly Gly Gly Gly Gly Gly Ala Gly Val
              665             670                         675

Pro Pro Glu Ala Leu Leu Ala Pro Leu Met Gln Asn Gly Trp Ala
              680             685                         690

Lys Ala Thr Leu Leu Gln Gly Gly Pro His Asp Leu Asp Ser Gly
              695             700                         705

Leu Leu Pro Thr Pro Glu Gln Thr Pro Leu Pro Gln Lys Arg Leu
              710             715                         720

Pro Thr Pro His Pro His Pro His Ala Leu Gly Pro Arg Ala Trp
              725             730                         735

Asp His Gly His Pro Leu Leu Pro Ala Ser Ala Ser Ser Ser Leu
              740             745                         750

Leu Leu Leu Ala Pro Ala Arg Ala Pro Glu Gln Pro Pro Ala Pro
              755             760                         765

Gly Glu Pro Thr Pro Asp Gly Arg Leu Tyr Ala Ala Arg Pro Gly
              770             775                         780

Arg Ala Ser His Gly Asp Phe Pro Leu Thr Pro His Ala Ser Pro
              785             790                         795

Asp Arg Arg Arg Val Val Ser Ala Pro Thr Gly Pro Leu Asp Pro
              800             805                         810

Ala Ser Ala Ala Asp Gly Leu Pro Arg Pro Trp Ser Pro Pro Pro
              815             820                         825

Thr Gly Ser Leu Arg Arg Pro Leu Gly Pro His Ala Pro Pro Ala
              830             835                         840

Ala Thr Leu Arg Arg Thr His Thr Phe Asn Ser Gly Glu Ala Arg
              845             850                         855
```

324

```
Pro Gly Asp Arg His Arg Gly Cys His Ala Arg Pro Gly Thr Asp
                860                 865                 870

Leu Ala His Leu Leu Pro Tyr Gly Gly Ala Asp Arg Thr Ala Pro
                875                 880                 885

Pro Val Pro
```

<210> 269
<211> 457
<212> DNA
<213> Homosapiens

<400> 269

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acaggttgac tgtggtgagt tccaggaccc caaggtctac tgcactcggg 150

aatctaaccc acactgtggc tctgatggcc agacatatgg caataaatgt 200

gccttctgta aggccatagt gaaaagtggt ggaaagatta gcctaaagca 250

tcctggaaaa tgctgagtta aagccaatgt ttcttggtga cttgccagct 300

tttgcagcct tcttttctca cttctgctta tacttttgct ggtggattcc 350

tttaattcat aaagacatac ctactctgcc tgggtcttga ggagttcaat 400

gtatgtctat ttctcttgat tcacttgtca ataaagtaca ttctgcaaaa 450

gcaaaaa 457
```

<210> 270
<211> 80
<212> PRT
<213> Homosapiens

<400> 270

```
Met Lys Leu Ser Gly Met Phe Leu Leu Leu Ser Leu Ala Leu Phe
  1           5                  10                  15

Cys Phe Leu Thr Gly Val Phe Ser Gln Gly Gly Gln Val Asp Cys
                20                  25                  30

Gly Glu Phe Gln Asp Pro Lys Val Tyr Cys Thr Arg Glu Ser Asn
                35                  40                  45

Pro His Cys Gly Ser Asp Gly Gln Thr Tyr Gly Asn Lys Cys Ala
                50                  55                  60

Phe Cys Lys Ala Ile Val Lys Ser Gly Gly Lys Ile Ser Leu Lys
                65                  70                  75

His Pro Gly Lys Cys
                80
```

<210> 271
<211> 1177
<212> DNA
<213> Homosapiens

<400> 271
aacttctaca tgggcctcct gctgctggtg ctcttcctca gcctcctgcc 50

ggtggcctac accatcatgt ccctcccacc ctcctttgac tgcgggccgt 100

tcaggtgcag agtctcagtt gcccgggagc acctcccctc ccgaggcagt 150

ctgctcagag ggcctcggcc cagaattcca gttctggttt catgccagcc 200

tgtaaaaggc catggaactt tgggtgaatc accgatgcca tttaagaggg 250

ttttctgcca ggatggaaat gttaggtcgt tctgtgtctg cgctgttcat 300

ttcagtagcc accagccacc tgtggccgtt gagtgcttga aatgaggaac 350

tgagaaaatt aatttctcat gtatttttct catttatttta ttaattttta 400

actgatagtt gtacatattt gggggtacat gtgatatttg gatacatgta 450

tacaatatat aatgatcaaa tcagggtaac tgggatatcc atcacatcaa 500

acatttattt tttattcttt ttagacagag tctcactctg tcacccaggc 550

tggagtgcag tggtgccatc tcagcttact gcaacctctg cctgccaggt 600

tcaagcgatt ctcatgcctc acctcccaa gtagctggga ctacaggcat 650

gcaccacaat gcccaactaa ttttttgtatt tttagtagag acggggtttt 700

gccatgttgc ccaggctggc cttgaactcc tggcctcaaa caatccactt 750

gcctcggcct cccaaagtgt tatgattaca ggcgtgagcc accgtgcctg 800

gcctaaacat ttatcttttc tttgtgttgg gaactttgaa attatacaat 850

gaattattgt taactgtcat ctccctgctg tgctatggaa cactgggact 900

tcttccctct atctaactgt atatttgtac cagttaacca accgtacttc 950

atccccactc ctctctatcc ttcccaacct ctgatcacct cattctactc 1000

tctacctcca tgagatccac tttttttagct cccacatgtg agtaagaaaa 1050

tgcaatattt gtctttctgt gcctggctta tttcacttaa cataatgact 1100

tcctgttcca tccatgttgc tgcaaatgac aggatttcgt tcttaatttc 1150

aattaaaata accacacatg gcaaaaa 1177

<210> 272
<211> 111
<212> PRT
<213> Homosapiens

<400> 272
Met Gly Leu Leu Leu Leu Val Leu Phe Leu Ser Leu Leu Pro Val
1               5                   10                  15

Ala Tyr Thr Ile Met Ser Leu Pro Pro Ser Phe Asp Cys Gly Pro
                20                  25                  30

Phe Arg Cys Arg Val Ser Val Ala Arg Glu His Leu Pro Ser Arg
                35                  40                  45

326

```
Gly Ser Leu Leu Arg Gly Pro Arg Pro Arg Ile Pro Val Leu Val
                50              55              60

Ser Cys Gln Pro Val Lys Gly His Gly Thr Leu Gly Glu Ser Pro
                65              70              75

Met Pro Phe Lys Arg Val Phe Cys Gln Asp Gly Asn Val Arg Ser
                80              85              90

Phe Cys Val Cys Ala Val His Phe Ser Ser His Gln Pro Pro Val
                95             100             105

Ala Val Glu Cys Leu Lys
                110
```

<210> 273
<211> 2061
<212> DNA
<213> Homosapiens

<400> 273

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ttctgaagta acggaagcta ccttgtataa agacctcaac actgctgacc 50

atgatcagcg cagcctggag catcttcctc atcgggacta aaattgggct 100

gttccttcaa gtagcacctc tatcagttat ggctaaatcc tgtccatctg 150

tgtgtcgctg cgatgcgggt ttcatttact gtaatgatcg ctttctgaca 200

tccattccaa caggaatacc agaggatgct acaactctct accttcagaa 250

caaccaaata aataatgctg ggattccttc agatttgaaa aacttgctga 300

aagtagaaag aatataccta taccacaaca gtttagatga atttcctacc 350

aacctcccaa agtatgtaaa agagttacat ttgcaagaaa ataacataag 400

gactatcact tatgattcac tttcaaaaat tccctatctg gaagaattac 450

atttagatga caactctgtc tctgcagtta gcatagaaga gggagcattc 500

cgagacagca actatctccg actgctttc ctgtcccgta atcaccttag 550

cacaattccc tggggtttgc ccaggactat agaagaacta cgcttggatg 600

ataatcgcat atccactatt tcatcaccat ctcttcaagg tctcactagt 650

ctaaaacgcc tggttctaga tggaaacctg ttgaacaatc atggtttagg 700

tgacaaagtt ttcttcaacc tagttaattt gacagagctg tccctggtgc 750

ggaattccct gactgctgca ccagtaaacc ttccaggcac aaacctgagg 800

aagctttatc ttcaagataa ccacatcaat cgggtgcccc caaatgcttt 850

ttcttatcta aggcagctct atcgactgga tatgtccaat aataacctaa 900

gtaatttacc tcagggtatc tttgatgatt tggacaatat aacacaactg 950

attcttcgca acaatccctg gtattgcggg tgcaagatga aatgggtacg 1000

tgactggtta caatcactac ctgtgaaggt caacgtgcgt gggctcatgt 1050
```

327

```
gccaagcccc agaaaaggtt cgtgggatgg ctattaagga tctcaatgca 1100

gaactgtttg attgtaagga cagtgggatt gtaagcacca ttcagataac 1150

cactgcaata cccaacacag tgtatcctgc ccaaggacag tggccagctc 1200

cagtgaccaa acagccagat attaagaacc ccaagctcac taaggatcaa 1250

caaaccacag ggagtccctc aagaaaaaca attacaatta ctgtgaagtc 1300

tgtcacctct gataccattc atatctcttg gaaacttgct ctacctatga 1350

ctgctttgag actcagctgg cttaaactgg ccatagccc ggcatttgga 1400

tctataacag aaacaattgt aacaggggaa cgcagtgagt acttggtcac 1450

agccctggag cctgattcac cctataaagt atgcatggtt cccatggaaa 1500

ccagcaacct ctacctattt gatgaaactc ctgtttgtat tgagactgaa 1550

actgcacccc ttcgaatgta caaccctaca accaccctca atcgagagca 1600

agagaaagaa ccttacaaaa accccaattt acctttggct gccatcattg 1650

gtggggctgt ggccctggtt accattgccc ttcttgcttt agtgtgttgg 1700

tatgttcata ggaatggatc gctcttctca aggaactgtg catatagcaa 1750

agggaggaga agaaaggatg actatgcaga agctggcact aagaaggaca 1800

actctatcct ggaaatcagg gaaacttctt ttcagatgtt accaataagc 1850

aatgaaccca tctcgaagga ggagtttgta atacacacca tatttcctcc 1900

taatggaatg aatctgtaca aaaacaatca cagtgaaagc agtagtaacc 1950

gaagctacag agacagtggt attccagact cagatcactc acactcatga 2000

tgctgaagga ctcacagcag acttgtgttt tgggtttttt aaacctaagg 2050

gaggtgatgg t 2061
```

```
Met Ile Ser Ala Ala Trp Ser Ile Phe Leu Ile Gly Thr Lys Ile
 1               5                10                15

Gly Leu Phe Leu Gln Val Ala Pro Leu Ser Val Met Ala Lys Ser
               20              25              30

Cys Pro Ser Val Cys Arg Cys Asp Ala Gly Phe Ile Tyr Cys Asn
               35              40              45

Asp Arg Phe Leu Thr Ser Ile Pro Thr Gly Ile Pro Glu Asp Ala
               50              55              60

Thr Thr Leu Tyr Leu Gln Asn Asn Gln Ile Asn Asn Ala Gly Ile
               65              70              75
```

```
Pro Ser Asp Leu Lys Asn Leu Leu Lys Val Glu Arg Ile Tyr Leu
                80                  85                      90

Tyr His Asn Ser Leu Asp Glu Phe Pro Thr Asn Leu Pro Lys Tyr
                95                 100                     105

Val Lys Glu Leu His Leu Gln Glu Asn Asn Ile Arg Thr Ile Thr
               110                 115                     120

Tyr Asp Ser Leu Ser Lys Ile Pro Tyr Leu Glu Glu Leu His Leu
               125                 130                     135

Asp Asp Asn Ser Val Ser Ala Val Ser Ile Glu Glu Gly Ala Phe
               140                 145                     150

Arg Asp Ser Asn Tyr Leu Arg Leu Leu Phe Leu Ser Arg Asn His
               155                 160                     165

Leu Ser Thr Ile Pro Trp Gly Leu Pro Arg Thr Ile Glu Glu Leu
               170                 175                     180

Arg Leu Asp Asp Asn Arg Ile Ser Thr Ile Ser Ser Pro Ser Leu
               185                 190                     195

Gln Gly Leu Thr Ser Leu Lys Arg Leu Val Leu Asp Gly Asn Leu
               200                 205                     210

Leu Asn Asn His Gly Leu Gly Asp Lys Val Phe Phe Asn Leu Val
               215                 220                     225

Asn Leu Thr Glu Leu Ser Leu Val Arg Asn Ser Leu Thr Ala Ala
               230                 235                     240

Pro Val Asn Leu Pro Gly Thr Asn Leu Arg Lys Leu Tyr Leu Gln
               245                 250                     255

Asp Asn His Ile Asn Arg Val Pro Pro Asn Ala Phe Ser Tyr Leu
               260                 265                     270

Arg Gln Leu Tyr Arg Leu Asp Met Ser Asn Asn Asn Leu Ser Asn
               275                 280                     285

Leu Pro Gln Gly Ile Phe Asp Asp Leu Asp Asn Ile Thr Gln Leu
               290                 295                     300

Ile Leu Arg Asn Asn Pro Trp Tyr Cys Gly Cys Lys Met Lys Trp
               305                 310                     315

Val Arg Asp Trp Leu Gln Ser Leu Pro Val Lys Val Asn Val Arg
               320                 325                     330

Gly Leu Met Cys Gln Ala Pro Glu Lys Val Arg Gly Met Ala Ile
               335                 340                     345

Lys Asp Leu Asn Ala Glu Leu Phe Asp Cys Lys Asp Ser Gly Ile
               350                 355                     360

Val Ser Thr Ile Gln Ile Thr Thr Ala Ile Pro Asn Thr Val Tyr
               365                 370                     375

Pro Ala Gln Gly Gln Trp Pro Ala Pro Val Thr Lys Gln Pro Asp
               380                 385                     390
```

```
Ile Lys Asn Pro Lys Leu Thr Lys Asp Gln Gln Thr Thr Gly Ser
            395             400                     405

Pro Ser Arg Lys Thr Ile Thr Ile Thr Val Lys Ser Val Thr Ser
            410             415                     420

Asp Thr Ile His Ile Ser Trp Lys Leu Ala Leu Pro Met Thr Ala
            425             430                     435

Leu Arg Leu Ser Trp Leu Lys Leu Gly His Ser Pro Ala Phe Gly
            440             445                     450

Ser Ile Thr Glu Thr Ile Val Thr Gly Glu Arg Ser Glu Tyr Leu
            455             460                     465

Val Thr Ala Leu Glu Pro Asp Ser Pro Tyr Lys Val Cys Met Val
            470             475                     480

Pro Met Glu Thr Ser Asn Leu Tyr Leu Phe Asp Glu Thr Pro Val
            485             490                     495

Cys Ile Glu Thr Glu Thr Ala Pro Leu Arg Met Tyr Asn Pro Thr
            500             505                     510

Thr Thr Leu Asn Arg Glu Gln Glu Lys Glu Pro Tyr Lys Asn Pro
            515             520                     525

Asn Leu Pro Leu Ala Ala Ile Ile Gly Gly Ala Val Ala Leu Val
            530             535                     540

Thr Ile Ala Leu Leu Ala Leu Val Cys Trp Tyr Val His Arg Asn
            545             550                     555

Gly Ser Leu Phe Ser Arg Asn Cys Ala Tyr Ser Lys Gly Arg Arg
            560             565                     570

Arg Lys Asp Asp Tyr Ala Glu Ala Gly Thr Lys Lys Asp Asn Ser
            575             580                     585

Ile Leu Glu Ile Arg Glu Thr Ser Phe Gln Met Leu Pro Ile Ser
            590             595                     600

Asn Glu Pro Ile Ser Lys Glu Glu Phe Val Ile His Thr Ile Phe
            605             610                     615

Pro Pro Asn Gly Met Asn Leu Tyr Lys Asn Asn His Ser Glu Ser
            620             625                     630

Ser Ser Asn Arg Ser Tyr Arg Asp Ser Gly Ile Pro Asp Ser Asp
            635             640                     645

His Ser His Ser
```

```
gcgcgcggcc ggctccggcg tcttccagct gcagctgcag gagttcatca 150

acgagcgcgg cgtactggcc agtgggcggc cttgcgagcc cggctgccgg 200

actttcttcc gcgtctgcct taagcacttc caggcggtcg tctcgcccgg 250

accctgcacc ttcgggaccg tctccacgcc ggtattgggc accaactcct 300

tcgctgtccg ggacgacagt agcggcgggg ggcgcaaccc tctccaactg 350

cccttcaatt tcacctggcc gggtaccttc tcgctcatca tcgaagcttg 400

gcacgcgcca ggagacgacc tgcggccaga ggccttgcca ccagatgcac 450

tcatcagcaa gatcgccatc cagggctccc tagctgtggg tcagaactgg 500

ttattggatg agcaaaccag caccctcaca aggctgcgct actcttaccg 550

ggtcatctgc agtgacaact actatggaga caactgctcc cgcctgtgca 600

agaagcgcaa tgaccacttc ggccactatg tgtgccagcc agatggcaac 650

ttgtcctgcc tgcccggttg gactggggaa tattgccaac agcctatctg 700

tctttcgggc tgtcatgaac agaatggcta ctgcagcaag ccagcagagt 750

gcctctgccg cccaggctgg cagggccggc tgtgtaacga atgcatcccc 800

cacaatggct gtcgccacgg cacctgcagc actccctggc aatgtacttg 850

tgatgagggc tggggaggcc tgttttgtga ccaagatctc aactactgca 900

cccaccactc cccatgcaag aatggggcaa cgtgctccaa cagtgggcag 950

cgaagctaca cctgcacctg tcgcccaggc tacactggtg tggactgtga 1000

gctggagctc agcgagtgtg acagcaaccc ctgtcgcaat ggaggcagct 1050

gtaaggacca ggaggatggc taccactgcc tgtgtcctcc gggctactat 1100

ggcctgcact gtgaacacag caccttgagc tgcgccgact ccccctgctt 1150

caatgggggc tcctgccggg agcgcaacca gggggccaac tatgcttgtg 1200

aatgtccccc caacttcacc ggctccaact gcgagaagaa agtggacagg 1250

tgcaccagca cccctgtgc caacggggga cagtgcctga ccgaggtcc 1300

aagccgcatg tgccgctgcc gtcctggatt cacgggcacc tactgtgaac 1350

tccacgtcag cgactgtgcc cgtaaccctt gcgcccacgg tggcacttgc 1400

catgacctgg agaatgggct catgtgcacc tgccctgccg gcttctctgg 1450

ccgacgctgt gaggtgcgga catccatcga tgcctgtgcc tcgagtccct 1500

gcttcaacag ggccacctgc tacaccgacc tctccacaga cacctttgtg 1550

tgcaactgcc cttatggctt tgtgggcagc cgctgcgagt tccccgtggg 1600

cttgccgccc agcttcccct gggtggccgt ctcgctgggt gtggggctgg 1650

cagtgctgct ggtactgctg ggcatggtgg cagtggctgt gcggcagctg 1700
```

```
cggcttcgac ggccggacga cggcagcagg gaagccatga acaacttgtc 1750

ggacttccag aaggacaacc tgattcctgc cgcccagctt aaaaacacaa 1800

accagaagaa ggagctggaa gtggactgtg cctggacaa gtccaactgt 1850

ggcaaacagc aaaaccacac attggactat aatctggccc cagggcccct 1900

ggggcggggg accatgccag gaaagtttcc ccacagtgac aagagcttag 1950

gagagaaggc gccactgcgg ttacacagtg aaaagccaga gtgtcggata 2000

tcagcgatat gctcccccag ggactccatg taccagtctg tgtgtttgat 2050

atcagaggag aggaatgaat gtgtcattgc cacggaggta taaggcagga 2100

gcctacctgg acatccctgc tcagccccgc ggctggacct tccttctgca 2150

ttgtttaca 2159
```

<210> 276
<211> 685
<212> PRT
<213> Homosapiens

<400> 276

```
Met Ala Ala Ala Ser Arg Ser Ala Ser Gly Trp Ala Leu Leu Leu
 1               5                   10                  15

Leu Val Ala Leu Trp Gln Gln Arg Ala Ala Gly Ser Gly Val Phe
                20                  25                  30

Gln Leu Gln Leu Gln Glu Phe Ile Asn Glu Arg Gly Val Leu Ala
                35                  40                  45

Ser Gly Arg Pro Cys Glu Pro Gly Cys Arg Thr Phe Phe Arg Val
                50                  55                  60

Cys Leu Lys His Phe Gln Ala Val Val Ser Pro Gly Pro Cys Thr
                65                  70                  75

Phe Gly Thr Val Ser Thr Pro Val Leu Gly Thr Asn Ser Phe Ala
                80                  85                  90

Val Arg Asp Asp Ser Ser Gly Gly Gly Arg Asn Pro Leu Gln Leu
                95                  100                 105

Pro Phe Asn Phe Thr Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu
                110                 115                 120

Ala Trp His Ala Pro Gly Asp Asp Leu Arg Pro Glu Ala Leu Pro
                125                 130                 135

Pro Asp Ala Leu Ile Ser Lys Ile Ala Ile Gln Gly Ser Leu Ala
                140                 145                 150

Val Gly Gln Asn Trp Leu Leu Asp Glu Gln Thr Ser Thr Leu Thr
                155                 160                 165

Arg Leu Arg Tyr Ser Tyr Arg Val Ile Cys Ser Asp Asn Tyr Tyr
                170                 175                 180

Gly Asp Asn Cys Ser Arg Leu Cys Lys Lys Arg Asn Asp His Phe
```

332

```
                185                      190                      195

Gly His Tyr Val Cys Gln Pro Asp Gly Asn Leu Ser Cys Leu Pro
                200                      205                      210

Gly Trp Thr Gly Glu Tyr Cys Gln Gln Pro Ile Cys Leu Ser Gly
                215                      220                      225

Cys His Glu Gln Asn Gly Tyr Cys Ser Lys Pro Ala Glu Cys Leu
                230                      235                      240

Cys Arg Pro Gly Trp Gln Gly Arg Leu Cys Asn Glu Cys Ile Pro
                245                      250                      255

His Asn Gly Cys Arg His Gly Thr Cys Ser Thr Pro Trp Gln Cys
                260                      265                      270

Thr Cys Asp Glu Gly Trp Gly Gly Leu Phe Cys Asp Gln Asp Leu
                275                      280                      285

Asn Tyr Cys Thr His His Ser Pro Cys Lys Asn Gly Ala Thr Cys
                290                      295                      300

Ser Asn Ser Gly Gln Arg Ser Tyr Thr Cys Thr Cys Arg Pro Gly
                305                      310                      315

Tyr Thr Gly Val Asp Cys Glu Leu Glu Leu Ser Glu Cys Asp Ser
                320                      325                      330

Asn Pro Cys Arg Asn Gly Gly Ser Cys Lys Asp Gln Glu Asp Gly
                335                      340                      345

Tyr His Cys Leu Cys Pro Pro Gly Tyr Tyr Gly Leu His Cys Glu
                350                      355                      360

His Ser Thr Leu Ser Cys Ala Asp Ser Pro Cys Phe Asn Gly Gly
                365                      370                      375

Ser Cys Arg Glu Arg Asn Gln Gly Ala Asn Tyr Ala Cys Glu Cys
                380                      385                      390

Pro Pro Asn Phe Thr Gly Ser Asn Cys Glu Lys Lys Val Asp Arg
                395                      400                      405

Cys Thr Ser Asn Pro Cys Ala Asn Gly Gly Gln Cys Leu Asn Arg
                410                      415                      420

Gly Pro Ser Arg Met Cys Arg Cys Arg Pro Gly Phe Thr Gly Thr
                425                      430                      435

Tyr Cys Glu Leu His Val Ser Asp Cys Ala Arg Asn Pro Cys Ala
                440                      445                      450

His Gly Gly Thr Cys His Asp Leu Glu Asn Gly Leu Met Cys Thr
                455                      460                      465

Cys Pro Ala Gly Phe Ser Gly Arg Arg Cys Glu Val Arg Thr Ser
                470                      475                      480

Ile Asp Ala Cys Ala Ser Ser Pro Cys Phe Asn Arg Ala Thr Cys
                485                      490                      495

Tyr Thr Asp Leu Ser Thr Asp Thr Phe Val Cys Asn Cys Pro Tyr
```

```
Gly Phe Val Gly Ser Arg Cys Glu Phe Pro Val Gly Leu Pro Pro
                515                 520                 525

Ser Phe Pro Trp Val Ala Val Ser Leu Gly Val Gly Leu Ala Val
                530                 535                 540

Leu Leu Val Leu Leu Gly Met Val Ala Val Ala Val Arg Gln Leu
                545                 550                 555

Arg Leu Arg Arg Pro Asp Asp Gly Ser Arg Glu Ala Met Asn Asn
                560                 565                 570

Leu Ser Asp Phe Gln Lys Asp Asn Leu Ile Pro Ala Ala Gln Leu
                575                 580                 585

Lys Asn Thr Asn Gln Lys Lys Glu Leu Glu Val Asp Cys Gly Leu
                590                 595                 600

Asp Lys Ser Asn Cys Gly Lys Gln Gln Asn His Thr Leu Asp Tyr
                605                 610                 615

Asn Leu Ala Pro Gly Pro Leu Gly Arg Gly Thr Met Pro Gly Lys
                620                 625                 630

Phe Pro His Ser Asp Lys Ser Leu Gly Glu Lys Ala Pro Leu Arg
                635                 640                 645

Leu His Ser Glu Lys Pro Glu Cys Arg Ile Ser Ala Ile Cys Ser
                650                 655                 660

Pro Arg Asp Ser Met Tyr Gln Ser Val Cys Leu Ile Ser Glu Glu
                665                 670                 675

Arg Asn Glu Cys Val Ile Ala Thr Glu Val
                680                 685
```

<210> 277
<211> 1307
<212> DNA
<213> Homosapiens

<400> 277

```
ggcagtgcag ccgcctcaca ggtcggcgga cgggccaggc gggcggcctc 50

ctgaaccgaa ccgaatcggc tcctcgggcc gtcgtcctcc cgcccctcct 100

cgcccgccgc cggagttttc tttcggtttc ttccaagatt cctggccttc 150

cctcgacgga gccgggccca gtgcgggggc gcagggcgcg ggagctccac 200

ctcctcggct ttccctgcgt ccagaggctg gcatggcgcg gccgagtac 250

tgagcgcacg gtcggggcac agcagggccg gggggtgcag ctggctcgcg 300

cctcctctcc ggccgccgtc tcctccggtc cctggcgaaa gccattgaga 350

caccagctgg acgtcacgcg ccggagcatg tctgggagtc agagcgaggt 400

ggctccatcc ccgcagagtc cgcggagccc cgagatggga cgggacttgc 450

ggcccgggtc ccgcgtgctc ctgctcctgc ttctgctcct gctggtgtac 500
```

```
ctgactcagc caggcaatgg caacgagggc agcgtcactg gaagttgtta 550

ttgtggtaaa agaatttctt ccgactcccc gccatcggtt cagttcatga 600

atcgtctccg gaaacacctg agagcttacc atcggtgtct atactacacg 650

aggttccagc tcctttcctg gagcgtgtgt gggggcaaca aggacccatg 700

ggttcaggaa ttgatgagct gtcttgatct caaagaatgt ggacatgctt 750

actcggggat tgtggcccac cagaagcatt tacttcctac cagccccca 800

atttctcagg cctcagaggg ggcatcttca gatatccaca ccctgccca 850

gatgctcctg tccaccttgc agtccactca gcgccccacc ctcccagtag 900

gatcactgtc ctcggacaaa gagctcactc gtcccaatga aaccaccatt 950

cacactgcgg gccacagtct ggcagctggg cctgaggctg gggagaacca 1000

gaagcagccg gaaaaaaatg ctggtcccac agccaggaca tcagccacag 1050

tgccagtcct gtgcctcctg gccatcatct tcatcctcac cgcagccctt 1100

tcctatgtgc tgtgcaagag gaggaggggg cagtcaccgc agtcctctcc 1150

agatctgccg gttcattata tacctgtggc acctgactct aatacctgag 1200

ccaagaatgg aagcttgtga gggtaaactg tggcttattc ttacaaaaag 1250

tgtaataaag gagactgacc cctgacaaca tggtaggcac tgtaaaaaaa 1300

aaaaaaa 1307
```

```
<210>  278
<211>  254
<212>  PRT
<213>  Homosapiens

<400>  278
 Met Gly Arg Asp Leu Arg Pro Gly Ser Arg Val Leu Leu Leu Leu
  1               5                  10                  15

 Leu Leu Leu Leu Leu Val Tyr Leu Thr Gln Pro Gly Asn Gly Asn
                  20                  25                  30

 Glu Gly Ser Val Thr Gly Ser Cys Tyr Cys Gly Lys Arg Ile Ser
                  35                  40                  45

 Ser Asp Ser Pro Pro Ser Val Gln Phe Met Asn Arg Leu Arg Lys
                  50                  55                  60

 His Leu Arg Ala Tyr His Arg Cys Leu Tyr Tyr Thr Arg Phe Gln
                  65                  70                  75

 Leu Leu Ser Trp Ser Val Cys Gly Gly Asn Lys Asp Pro Trp Val
                  80                  85                  90

 Gln Glu Leu Met Ser Cys Leu Asp Leu Lys Glu Cys Gly His Ala
                  95                 100                 105

 Tyr Ser Gly Ile Val Ala His Gln Lys His Leu Leu Pro Thr Ser
                 110                 115                 120
```

335

```
Pro Pro Ile Ser Gln Ala Ser Glu Gly Ala Ser Ser Asp Ile His
            125             130             135

Thr Pro Ala Gln Met Leu Leu Ser Thr Leu Gln Ser Thr Gln Arg
            140             145             150

Pro Thr Leu Pro Val Gly Ser Leu Ser Ser Asp Lys Glu Leu Thr
            155             160             165

Arg Pro Asn Glu Thr Thr Ile His Thr Ala Gly His Ser Leu Ala
            170             175             180

Ala Gly Pro Glu Ala Gly Glu Asn Gln Lys Gln Pro Glu Lys Asn
            185             190             195

Ala Gly Pro Thr Ala Arg Thr Ser Ala Thr Val Pro Val Leu Cys
            200             205             210

Leu Leu Ala Ile Ile Phe Ile Leu Thr Ala Ala Leu Ser Tyr Val
            215             220             225

Leu Cys Lys Arg Arg Arg Gly Gln Ser Pro Gln Ser Ser Pro Asp
            230             235             240


Leu Pro Val His Tyr Ile Pro Val Ala Pro Asp Ser Asn Thr
            245             250
```

```
<210> 279
<211> 3060
<212> DNA
<213> Homosapiens

<400> 279
 cgcgaggcgc ggggagcctg ggaccaggag cgagagccgc ctacctgcag  50

 ccgccgccca cggcacggca gccaccatgg cgctcctgct gtgcttcgtg  100

 ctcctgtgcg agtagtgga tttcgccaga agtttgagta tcactactcc  150

 tgaagagatg attgaaaaag ccaaagggga aactgcctat ctgccatgca  200

 aatttacgct tagtcccgaa gaccagggac cgctggacat cgagtggctg  250

 atatcaccag ctgataatca gaaggtggat caagtgatta ttttatattc  300

 tggagacaaa atttatgatg actactatcc agatctgaaa ggccgagtac  350

 attttacgag taatgatctc aaatctggtg atgcatcaat aaatgtaacg  400

 aatttacaac tgtcagatat tggcacatat cagtgcaaag tgaaaaaagc  450

 tcctggtgtt gcaaataaga agattcatct ggtagttctt gttaagcctt  500

 caggtgcgag atgttacgtt gatggatctg aagaaattgg aagtgacttt  550

 aagataaaat gtgaaccaaa agaaggttca cttccattac agtatgagtg  600

 gcaaaaattg tctgactcac agaaatgcc cacttcatgg ttagcagaaa  650

 tgacttcatc tgttatatct gtaaaaaatg cctcttctga gtactctggg  700

 acatacagct gtacagtcag aaacagagtg ggctctgatc agtgcctgtt  750
```

```
gcgtctaaac gttgtccctc cttcaaataa agctggacta attgcaggag 800

ccattatagg aactttgctt gctctagcgc tcattggtct tatcatcttt 850

tgctgtcgta aaaagcgcag agaagaaaaa tatgaaaagg aagttcatca 900

cgatatcagg gaagatgtgc cacctccaaa gagccgtacg tccactgcca 950

gaagctacat cggcagtaat cattcatccc tggggtccat gtctccttcc 1000

aacatggaag gatattccaa gactcagtat aaccaagtac caagtgaaga 1050

ctttgaacgc actcctcaga gtccgactct cccacctgct aagttcaagt 1100

acccttacaa gactgatgga attacagttg tataaatatg gactactgaa 1150

gaatctgaag tattgtatta tttgacttta ttttaggcct ctagtaaaga 1200

cttaaatgtt ttttaaaaaa agcacaaggc acagagatta gagcagctgt 1250

aagaacacat ctactttatg caatggcatt agacatgtaa gtcagatgtc 1300

atgtcaaaat tagtacgagc caaattcttt gttaaaaaac cctatgtata 1350

gtgacactga tagttaaaag atgttttatt atattttcaa taactaccac 1400

taacaaattt ttaacttttc atatgcatat tctgatatgt ggtcttttag 1450

gaaaagtatg gttaatagtt gatttttcaa aggaaatttt aaaattctta 1500

cgttctgttt aatgtttttg ctatttagtt aaatacattg aagggaaata 1550

cccgttcttt tcccctttta tgcacacaac agaaacacgc gttgtcatgc 1600

ctcaaactat tttttatttg caactacatg atttcacaca attctcttaa 1650

acaacgacat aaaatagatt tccttgtata taaataactt acatacgctc 1700

cataaagtaa attctcaaag gtgctagaac aaatcgtcca cttctacagt 1750

gttctcgtat ccaacagagt tgatgcacaa tatataaata ctcaagtcca 1800

atattaaaaa cttaggcact tgactaactt taataaaatt tctcaaacta 1850

tatcaatatc taaagtgcat atatttttta agaaagatta ttctcaataa 1900

cttctataaa aataagtttg atggtttggc ccatctaact tcactactat 1950

tagtaagaac ttttaacttt taatgtgtag taaggtttat tctacctttt 2000

tctcaacatg acaccaacac aatcaaaaac gaagttagtg aggtgctaac 2050

atgtgaggat taatccagtg attccggtca caatgcattc caggaggagg 2100

tacccatgtc actggaattg ggcgatatgg tttatttttt cttccctgat 2150

ttggataacc aaatggaaca ggaggaggat agtgattctg atggccattc 2200

cctcgataca ttcctggctt ttttctgggc aaagggtgcc acattggaag 2250

aggtggaaat ataagttctg aaatctgtag ggaagagaac acattaagtt 2300

aattcaaagg aaaaaatcat catctatgtt ccagatttct cattaaagac 2350
```

```
aaagttaccc acaacactga gatcacatct aagtgacact cctattgtca 2400

ggtctaaata cattaaaaac ctcatgtgta ataggcgtat aatgtataac 2450

aggtgaccaa tgttttctga atgcataaag aaatgaataa actcaaacac 2500

agtacttcct aaacaacttc aaccaaaaaa gaccaaaaca tggaacgaat 2550

ggaagcttgt aaggacatgc ttgttttagt ccagtggttt ccacagctgg 2600

ctaagccagg agtcacttgg aggctttaa atacaaaaca ttggagctgg 2650

aggccattat ccttagcaaa ctaatgcaga aacagaaat caactaccgc 2700

atgttctcac ttataagtgg gaggtaatga taagaactta tgaacacaaa 2750

gaaggaaaca atagacattg gagtctattt gagaggggag ggtgggagaa 2800

ggaaaaggag cagaaaagat aactattgag tactgccttc acacctgggt 2850

gatgaaataa tatgtacaac aaatccctgt gacacatgtt tacctatgga 2900

acaaaccttc atgtgtatcc ctaaacctaa aataaaagtt aaaaaaaaaa 2950

aaaraaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3000

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3050

aaaaaaaaaa 3060
```

<210> 280
<211> 352
<212> PRT
<213> Homosapiens

<400> 280

```
Met Ala Leu Leu Leu Cys Phe Val Leu Leu Cys Gly Val Val Asp
 1               5                  10                  15

Phe Ala Arg Ser Leu Ser Ile Thr Thr Pro Glu Glu Met Ile Glu
                20                  25                  30

Lys Ala Lys Gly Glu Thr Ala Tyr Leu Pro Cys Lys Phe Thr Leu
                35                  40                  45

Ser Pro Glu Asp Gln Gly Pro Leu Asp Ile Glu Trp Leu Ile Ser
                50                  55                  60

Pro Ala Asp Asn Gln Lys Val Asp Gln Val Ile Ile Leu Tyr Ser
                65                  70                  75

Gly Asp Lys Ile Tyr Asp Asp Tyr Tyr Pro Asp Leu Lys Gly Arg
                80                  85                  90

Val His Phe Thr Ser Asn Asp Leu Lys Ser Gly Asp Ala Ser Ile
                95                  100                 105

Asn Val Thr Asn Leu Gln Leu Ser Asp Ile Gly Thr Tyr Gln Cys
                110                 115                 120

Lys Val Lys Lys Ala Pro Gly Val Ala Asn Lys Lys Ile His Leu
                125                 130                 135
```

338

```
Val Val Leu Val Lys Pro Ser Gly Ala Arg Cys Tyr Val Asp Gly
            140               145                   150

Ser Glu Glu Ile Gly Ser Asp Phe Lys Ile Lys Cys Glu Pro Lys
            155               160                   165

Glu Gly Ser Leu Pro Leu Gln Tyr Glu Trp Gln Lys Leu Ser Asp
            170               175                   180

Ser Gln Lys Met Pro Thr Ser Trp Leu Ala Glu Met Thr Ser Ser
            185               190                   195

Val Ile Ser Val Lys Asn Ala Ser Ser Glu Tyr Ser Gly Thr Tyr
            200               205                   210

Ser Cys Thr Val Arg Asn Arg Val Gly Ser Asp Gln Cys Leu Leu
            215               220                   225

Arg Leu Asn Val Val Pro Pro Ser Asn Lys Ala Gly Leu Ile Ala
            230               235                   240

Gly Ala Ile Ile Gly Thr Leu Leu Ala Leu Ala Leu Ile Gly Leu
            245               250                   255

Ile Ile Phe Cys Cys Arg Lys Lys Arg Arg Glu Glu Lys Tyr Glu
            260               265                   270

Lys Glu Val His His Asp Ile Arg Glu Asp Val Pro Pro Pro Lys
            275               280                   285

Ser Arg Thr Ser Thr Ala Arg Ser Tyr Ile Gly Ser Asn His Ser
            290               295                   300

Ser Leu Gly Ser Met Ser Pro Ser Asn Met Glu Gly Tyr Ser Lys
            305               310                   315

Thr Gln Tyr Asn Gln Val Pro Ser Glu Asp Phe Glu Arg Thr Pro
            320               325                   330

Gln Ser Pro Thr Leu Pro Pro Ala Lys Phe Lys Tyr Pro Tyr Lys
            335               340                   345

Thr Asp Gly Ile Thr Val Val
            350
```

<210> 281
<211> 1240
<212> DNA
<213> Homosapiens

<400> 281
```
 tgcatcagtg cccaggcaag cccaggagtt gacatttctc tgcccagcca 50

 tgggcctcac cctgctcttg ctgctgctcc tgggactaga aggtcagggc 100

 atagttggca gcctccctga ggtgctgcag gcacccgtgg gaagctccat 150

 tctggtgcag tgccactaca ggctccagga tgtcaaagct cagaaggtgt 200

 ggtgccggtt cttgccggag gggtgccagc ccctggtgtc ctcagctgtg 250

 gatcgcagag ctccagcggg caggcgtacg tttctcacag acctgggtgg 300
```

339

```
gggcctgctg caggtggaaa tggttaccct gcaggaagag gatgctggcg 350

agtatggctg catggtggat ggggccaggg ggccccagat tttgcacaga 400

gtctctctga acatactgcc cccagaggaa gaagaagaga cccataagat 450

tggcagtctg gctgagaacg cattctcaga ccctgcaggc agtgccaacc 500

ctttggaacc cagccaggat gagaagagca tcccccttgat ctggggtgct 550

gtgctcctgg taggtctgct ggtggcagcg gtggtgctgt ttgctgtgat 600

ggccaagagg aaacaagaat ccctcctcag tggtccacca cgtcagtgac 650

tctggaccgg ctgctgaatt gcctttggat gtaccacaca ttaggcttga 700

ctcaccacct tcatttgaca ataccaccta caccagccta cctcttgatt 750

ccccatcagg aaaaccttca ctcccagctc catcctcatt gcccctcta 800

cctcctaagg tcctggtctg ctccaagcct gtgacatatg ccacagtaat 850

cttcccggga gggaacaagg gtggagggac ctcgtgtggg ccagcccaga 900

atccacctaa caatcagact ccatccagct aagctgctca tcacacttta 950

aactcatgag gaccatccct aggggttctg tgcatccatc cagccagctc 1000

atgccctagg atccttagga tatctgagca accagggact ttaagatcta 1050

atccaatgtc ctaactttac tagggaaagt gacgctcaga catgactgag 1100

atgtcttggg gaagacctcc ctgcacccaa ctcccccact ggttcttcta 1150

ccattacaca ctgggctaaa taaaccctaa taatgatgtg caaaaaaaaa 1200

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1240
```

<210> 282
<211> 199
<212> PRT
<213> Homosapiens

<400> 282

```
Met Gly Leu Thr Leu Leu Leu Leu Leu Leu Gly Leu Glu Gly
 1               5                  10                  15

Gln Gly Ile Val Gly Ser Leu Pro Glu Val Leu Gln Ala Pro Val
                20                  25                  30

Gly Ser Ser Ile Leu Val Gln Cys His Tyr Arg Leu Gln Asp Val
                35                  40                  45

Lys Ala Gln Lys Val Trp Cys Arg Phe Leu Pro Glu Gly Cys Gln
                50                  55                  60

Pro Leu Val Ser Ser Ala Val Asp Arg Arg Ala Pro Ala Gly Arg
                65                  70                  75

Arg Thr Phe Leu Thr Asp Leu Gly Gly Gly Leu Leu Gln Val Glu
                80                  85                  90

Met Val Thr Leu Gln Glu Glu Asp Ala Gly Glu Tyr Gly Cys Met
```

```
                95                   100                  105
    Val Asp Gly Ala Arg Gly Pro Gln Ile Leu His Arg Val Ser Leu
                    110                 115                     120

    Asn Ile Leu Pro Pro Glu Glu Glu Glu Thr His Lys Ile Gly
                    125                 130                     135

    Ser Leu Ala Glu Asn Ala Phe Ser Asp Pro Ala Gly Ser Ala Asn
                    140                 145                     150

    Pro Leu Glu Pro Ser Gln Asp Glu Lys Ser Ile Pro Leu Ile Trp
                    155                 160                     165

    Gly Ala Val Leu Leu Val Gly Leu Leu Val Ala Ala Val Val Leu
                    170                 175                     180

    Phe Ala Val Met Ala Lys Arg Lys Gln Glu Ser Leu Leu Ser Gly
                    185                 190                     195

    Pro Pro Arg Gln
```

```
<210> 283
<211> 513
<212> DNA
<213> Homosapiens

<400> 283
 gtagcatagt gtgcagttca ctggaccaaa agctttggct gcacctcttc 50

 tggaaagctg gccatggggc tcttcatgat cattgcaatt ctgctgttcc 100

 agaaacccac agtaaccgaa caacttaaga agtgctggaa taactatgta 150

 caaggacatt gcaggaaaat ctgcagagta aatgaagtgc ctgaggcact 200

 atgtgaaaat gggagatact gttgcctcaa tatcaaggaa ctggaagcat 250

 gtaaaaaaat tacaaagcca cctcgtccaa agccagcaac acttgcactg 300

 actcttcaag actatgttac aataatagaa aatttcccaa gcctgaagac 350

 acagtctaca taaatcaaat acaatttcgt tttcacttgc ttctcaacct 400

 agtctaataa actaaggtga tgagatatac atcttcttcc ttctggtttc 450

 ttgatcctta aaatgacctt cgagcatatt ctaataaagt gcattgccag 500

 ttaaaaaaaa aaa 513
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```
<210> 284
<211> 99
<212> PRT
<213> Homosapiens

<400> 284
 Met Gly Leu Phe Met Ile Ile Ala Ile Leu Leu Phe Gln Lys Pro
  1               5                   10                  15

 Thr Val Thr Glu Gln Leu Lys Lys Cys Trp Asn Asn Tyr Val Gln
                20                  25                  30
```

```
Gly His Cys Arg Lys Ile Cys Arg Val Asn Glu Val Pro Glu Ala
            35              40              45

Leu Cys Glu Asn Gly Arg Tyr Cys Cys Leu Asn Ile Lys Glu Leu
            50              55              60

Glu Ala Cys Lys Lys Ile Thr Lys Pro Pro Arg Pro Lys Pro Ala
            65              70              75

Thr Leu Ala Leu Thr Leu Gln Asp Tyr Val Thr Ile Ile Glu Asn
            80              85              90

Phe Pro Ser Leu Lys Thr Gln Ser Thr
            95
```

<210> 285
<211> 1571
<212> DNA
<213> Homosapiens

<400> 285

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gatggcgcag ccacagcttc tgtgagattc gatttctccc cagttcccct  50

gtgggtctga ggggaccaga agggtgagct acgttggctt tctggaaggg  100

gaggctatat gcgtcaattc cccaaaacaa gttttgacat ttcccctgaa  150

atgtcattct ctatctattc actgcaagtg cctgctgttc caggccttac  200

ctgctgggca ctaacggcgg agccaggatg gggacagaat aaaggagcca  250

cgacctgtgc caccaactcg cactcagact ctgaactcag acctgaaatc  300

ttctcttcac gggaggcttg gcagtttttc ttactcctgt ggtctccaga  350

tttcaggcct aagatgaaag cctctagtct tgccttcagc cttctctctg  400

ctgcgtttta tctcctatgg actccttcca ctggactgaa gacactcaat  450

ttgggaagct gtgtgatcgc cacaaacctt caggaaatac gaaatggatt  500

ttctgagata cggggcagtg tgcaagccaa agatggaaac attgacatca  550

gaatcttaag gaggactgag tctttgcaag cacacaagcc tgcgaatcga  600

tgctgcctcc tgcgccattt gctaagactc tatctggaca gggtatttaa  650

aaactaccag acccctgacc attatactct ccggaagatc agcagcctcg  700

ccaattcctt tcttaccatc aagaaggacc tccggctctc tcatgcccac  750

atgacatgcc attgtgggga ggaagcaatg aagaaataca gccagattct  800

gagtcacttt gaaaagctgg aacctcaggc agcagttgtg aaggctttgg  850

gggaactaga cattcttctg caatggatgg aggagacaga ataggaggaa  900

agtgatgctg ctgctaagaa tattcgaggt caagagctcc agtcttcaat  950

acctgcagag gaggcatgac cccaaaccac catctcttta ctgtactagt  1000

cttgtgctgg tcacagtgta tcttatttat gcattacttg cttccttgca  1050
```

342

```
tgattgtctt tatgcatccc caatcttaat tgagaccata cttgtataag 1100

attttttgtaa tatctttctg ctattggata tatttattag ttaatatatt 1150

tatttatttt ttgctattta atgtatttat tttttttactt ggacatgaaa 1200

ctttaaaaaa attcacagat tatatttata acctgactag agcaggtgat 1250

gtatttttat acagtaaaaa aaaaaaacct tgtaaattct agaagagtgg 1300

ctaggggggt tattcatttg tattcaacta aggacatatt tactcatgct 1350

gatgctctgt gagatatttg aaattgaacc aatgactact taggatgggt 1400

tgtggaataa gttttgatgt ggaattgcac atctacctta caattactga 1450

ccatccccag tagactcccc agtcccataa ttgtgtatct tccagccagg 1500

aatcctacac ggccagcatg tatttctaca ataaagtttt tctttgcata 1550

ccaaaaaaaa aaaaaaaaaa a 1571
```

<210> 286
<211> 176
<212> PRT
<213> Homosapiens

<400> 286

```
Met Lys Ala Ser Ser Leu Ala Phe Ser Leu Leu Ser Ala Ala Phe
 1               5                   10                  15

Tyr Leu Leu Trp Thr Pro Ser Thr Gly Leu Lys Thr Leu Asn Leu
                20                  25                  30

Gly Ser Cys Val Ile Ala Thr Asn Leu Gln Glu Ile Arg Asn Gly
                    35                  40                  45

Phe Ser Glu Ile Arg Gly Ser Val Gln Ala Lys Asp Gly Asn Ile
                    50                  55                  60

Asp Ile Arg Ile Leu Arg Arg Thr Glu Ser Leu Gln Asp Thr Lys
                    65                  70                  75

Pro Ala Asn Arg Cys Cys Leu Leu Arg His Leu Leu Arg Leu Tyr
                    80                  85                  90

Leu Asp Arg Val Phe Lys Asn Tyr Gln Thr Pro Asp His Tyr Thr
                    95                  100                 105

Leu Arg Lys Ile Ser Ser Leu Ala Asn Ser Phe Leu Thr Ile Lys
                    110                 115                 120

Lys Asp Leu Arg Leu Ser His Ala His Met Thr Cys His Cys Gly
                    125                 130                 135

Glu Glu Ala Met Lys Lys Tyr Ser Gln Ile Leu Ser His Phe Glu
                    140                 145                 150

Lys Leu Glu Pro Gln Ala Ala Val Val Lys Ala Leu Gly Glu Leu
                    155                 160                 165

Asp Ile Leu Leu Gln Trp Met Glu Glu Thr Glu
                    170                 175
```

343

<210> 287
<211> 2031
<212> DNA
<213> Homosapiens

<220>
<221> unsure
<222> 2020
<223> unknown base

<400> 287
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aatgccccat gcgcacccca cagctcgcgc tcctgcaagt gttctttctg 50

gtgttccccg atggcgtccg gcctcagccc tcttcctccc catcaggggc 100

agtgcccacg tctttggagc tgcagcgagg gacggatggc ggaaccctcc 150

agtccccttc agaggcgact gcaactcgcc cggccgtgcc tggactccct 200

acagtggtcc ctactctcgt gactccctcg gccctggga ataggactgt 250

ggacctcttc ccagtcttac cgatctgtgt ctgtgacttg actcctggag 300

cctgcgatat aaattgctgc tgcgacaggg actgctatct tctccatccg 350

aggacagttt tctccttctg ccttccaggc agcgtaaggt cttcaagctg 400

ggtttgtgta dacaactctg ttatcttcag gagtaattcc ccgtttcctt 450

caagagtttt catggattct aatggaatca ggcagttttg tgtccatgtg 500

aacaactcaa acttaaacta tttccagaag cttcaaaagg tcaatgcaac 550

caacttccag gccctggctg cagagtttgg aggcgaatca ttcacttcaa 600

cattccaaac tcaatcacca ccatcttttt acagggctgg ggaccccatt 650

cttacttact tccccaagtg gtctgtaata agcttgctga dacaacctgc 700

aggagttgga gctgggggac tctgtgctga aagcaatcct gcaggtttcc 750

tagagagtaa aagtacaact tgcactcgtt ttttcaagaa cctggctagt 800

agctgtacct tggattcagc cctcaatgct gcctcttact ataacttcac 850

agtcttaaag gttccaagaa gcatgactga tccacagaat atggagttcc 900

aggttcctgt aatacttacc tcacaggcta atgctcctct gttggctgga 950

aacacttgtc agaatgtagt ttctcaggtc acctatgaga tagagaccaa 1000

tgggactttt ggaatccaga aagtttctgt cagtttggga caaaccaacc 1050

tgactgttga gccaggcgct tccttacagc aacacttcat ccttcgcttc 1100

agggcttttc aacagagcac agctgcttct ctcaccagtc ctagaagtgg 1150

gaatcctggc tatatagttg ggaagccact cttggctctg actgatgata 1200

taagttactc aatgaccctc ttacagagcc agggtaatgg aagttgctct 1250

gttaaaagac atgaagtgca gtttggagtg aatgcaatat ctggatgcaa 1300
```

344

```
gctcaggttg aagaaggcag actgcagcca cttgcagcag gagatttatc 1350

agactcttca tggaaggccc agaccagagt atgttgccat ctttggtaat 1400

gctgacccag cccagaaagg agggtggacc aggatcctca acaggcactg 1450

cagcatttca gctataaact gtacttcctg ctgtctcata ccagtttccc 1500

tggagatcca ggtattgtgg gcatatgtag gtctcctgtc caacccgcaa 1550

gctcatgtat caggagttcg attcctatac cagtgccagt ctatacagga 1600

ttctcagcaa gttacagaag tatctttgac aactcttgtg aactttgtgg 1650

acattaccca gaagccacag cctccaaggg gccaacccaa aatggactgg 1700

aaatggccat tcgacttctt tcccttcaaa gtggcattca gcagaggagt 1750

attctctcaa aaatgctcag tctctcccat ccttatcctg tgcctcttac 1800

tacttggagt tctcaaccta gagactatgt gaagaaaaga aaataatcag 1850

atttcagttt tccctatgag aaactctgag gcagccactt atcttggcta 1900

aatagaacct cacctgctca tgaccagaga gcatttagga taatagatga 1950

cctaactgaa ggaatccttg tatatgaaag gagttatttt agaaaagcaa 2000

taaaaatatt ttattcatcn taaaaaaaaa a 2031
```

```
<210> 288
<211> 607
<212> PRT
<213> Homosapiens

<400> 288
Met Arg Thr Pro Gln Leu Ala Leu Leu Gln Val Phe Phe Leu Val
 1               5                  10                  15

Phe Pro Asp Gly Val Arg Pro Gln Pro Ser Ser Ser Pro Ser Gly
                20                  25                  30

Ala Val Pro Thr Ser Leu Glu Leu Gln Arg Gly Thr Asp Gly Gly
                35                  40                  45

Thr Leu Gln Ser Pro Ser Glu Ala Thr Ala Thr Arg Pro Ala Val
                50                  55                  60

Pro Gly Leu Pro Thr Val Val Pro Thr Leu Val Thr Pro Ser Ala
                65                  70                  75

Pro Gly Asn Arg Thr Val Asp Leu Phe Pro Val Leu Pro Ile Cys
                80                  85                  90

Val Cys Asp Leu Thr Pro Gly Ala Cys Asp Ile Asn Cys Cys Cys
                95                  100                 105

Asp Arg Asp Cys Tyr Leu Leu His Pro Arg Thr Val Phe Ser Phe
                110                 115                 120

Cys Leu Pro Gly Ser Val Arg Ser Ser Ser Trp Val Cys Val Asp
                125                 130                 135
```

345

```
Asn Ser Val Ile Phe Arg Ser Asn Ser Pro Phe Pro Ser Arg Val
                140                 145                     150

Phe Met Asp Ser Asn Gly Ile Arg Gln Phe Cys Val His Val Asn
                155                 160                     165

Asn Ser Asn Leu Asn Tyr Phe Gln Lys Leu Gln Lys Val Asn Ala
                170                 175                     180

Thr Asn Phe Gln Ala Leu Ala Ala Glu Phe Gly Gly Glu Ser Phe
                185                 190                     195

Thr Ser Thr Phe Gln Thr Gln Ser Pro Pro Ser Phe Tyr Arg Ala
                200                 205                     210

Gly Asp Pro Ile Leu Thr Tyr Phe Pro Lys Trp Ser Val Ile Ser
                215                 220                     225

Leu Leu Arg Gln Pro Ala Gly Val Gly Ala Gly Gly Leu Cys Ala
                230                 235                     240

Glu Ser Asn Pro Ala Gly Phe Leu Glu Ser Lys Ser Thr Thr Cys
                245                 250                     255

Thr Arg Phe Phe Lys Asn Leu Ala Ser Ser Cys Thr Leu Asp Ser
                260                 265                     270

Ala Leu Asn Ala Ala Ser Tyr Tyr Asn Phe Thr Val Leu Lys Val
                275                 280                     285

Pro Arg Ser Met Thr Asp Pro Gln Asn Met Glu Phe Gln Val Pro
                290                 295                     300

Val Ile Leu Thr Ser Gln Ala Asn Ala Pro Leu Leu Ala Gly Asn
                305                 310                     315

Thr Cys Gln Asn Val Val Ser Gln Val Thr Tyr Glu Ile Glu Thr
                320                 325                     330

Asn Gly Thr Phe Gly Ile Gln Lys Val Ser Val Ser Leu Gly Gln
                335                 340                     345

Thr Asn Leu Thr Val Glu Pro Gly Ala Ser Leu Gln Gln His Phe
                350                 355                     360

Ile Leu Arg Phe Arg Ala Phe Gln Gln Ser Thr Ala Ala Ser Leu
                365                 370                     375

Thr Ser Pro Arg Ser Gly Asn Pro Gly Tyr Ile Val Gly Lys Pro
                380                 385                     390

Leu Leu Ala Leu Thr Asp Asp Ile Ser Tyr Ser Met Thr Leu Leu
                395                 400                     405

Gln Ser Gln Gly Asn Gly Ser Cys Ser Val Lys Arg His Glu Val
                410                 415                     420

Gln Phe Gly Val Asn Ala Ile Ser Gly Cys Lys Leu Arg Leu Lys
                425                 430                     435

Lys Ala Asp Cys Ser His Leu Gln Gln Glu Ile Tyr Gln Thr Leu
                440                 445                     450
```

346

```
His Gly Arg Pro Arg Pro Glu Tyr Val Ala Ile Phe Gly Asn Ala
                455             460             465
Asp Pro Ala Gln Lys Gly Gly Trp Thr Arg Ile Leu Asn Arg His
                470             475             480
Cys Ser Ile Ser Ala Ile Asn Cys Thr Ser Cys Cys Leu Ile Pro
                485             490             495
Val Ser Leu Glu Ile Gln Val Leu Trp Ala Tyr Val Gly Leu Leu
                500             505             510
Ser Asn Pro Gln Ala His Val Ser Gly Val Arg Phe Leu Tyr Gln
                515             520             525
Cys Gln Ser Ile Gln Asp Ser Gln Gln Val Thr Glu Val Ser Leu
                530             535             540
Thr Thr Leu Val Asn Phe Val Asp Ile Thr Gln Lys Pro Gln Pro
                545             550             555
Pro Arg Gly Gln Pro Lys Met Asp Trp Lys Trp Pro Phe Asp Phe
                560             565             570
Phe Pro Phe Lys Val Ala Phe Ser Arg Gly Val Phe Ser Gln Lys
                575             580             585
Cys Ser Val Ser Pro Ile Leu Ile Leu Cys Leu Leu Leu Leu Gly
                590             595             600
Val Leu Asn Leu Glu Thr Met
                605
```

<210> 289
<211> 2870
<212> DNA
<213> Homosapiens

<400> 289
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ccatgcaacc ccgcgccctg cgccttaacc aggactgctc cgcgcgcccc 100
tgagcctcgg gctccggccc ggacctgcag cctcccaggt ggctgggaag 150
aactctccaa caataaatac atttgataag aaagatggct ttaaaagtgc 200
tactagaaca agagaaaacg tttttcactc ttttagtatt actaggctat 250
ttgtcatgta aagtgacttg tgaatcagga gactgtagac agcaagaatt 300
cagggatcgg tctggaaact gtgttccctg caaccagtgt gggccaggca 350
tggagttgtc taaggaatgt ggcttcggct atggggagga tgcacagtgt 400
gtgacgtgcc ggctgcacag gttcaaggag gactgggggct tccagaaatg 450
caagccctgt ctggactgcg cagtggtgaa ccgctttcag aaggcaaatt 500
gttcagccac cagtgatgcc atctgcgggg actgcttgcc aggattttat 550
aggaagacga aacttgtcgg ctttcaagac atggagtgtg tgccttgtgg 600
```

347

```
agaccctcct cctccttacg aaccgcactg tgccagcaag gtcaacctcg 650

tgaagatcgc gtccacggcc tccagcccac gggacacggc gctggctgcc 700

gttatctgca gcgctctggc caccgtcctg ctggccctgc tcatcctctg 750

tgtcatctat tgtaagagac agtttatgga gaagaaaccc agctggtctc 800

tgcggtcgca ggacattcag tacaacggct ctgagctgtc gtgttttgac 850

agacctcagc tccacgaata tgcccacaga gcctgctgcc agtgccgccg 900

tgactcagtg cagacctgcg ggccggtgcg cttgctccca tccatgtgct 950

gtgaggaggc ctgcagcccc aacccggcga ctcttggttg tggggtgcat 1000

tctgcagcca gtcttcaggc aagaaacgca ggcccagccg gggagatggt 1050

gccgactttc ttcggatccc tcacgcagtc catctgtggc gagttttcag 1100

atgcctggcc tctgatgcag aatcccatgg gtggtgacaa catctctttt 1150

tgtgactctt atcctgaact cactggagaa gacattcatt ctctcaatcc 1200

agaacttgaa agctcaacgt ctttggattc aaatagcagt caagatttgg 1250

ttggtggggc tgttccagtc cagtctcatt ctgaaaactt tacagcagct 1300

actgatttat ctagatataa caacacactg gtagaatcag catcaactca 1350

ggatgcacta actatgagaa gccagctaga tcaggagagt ggcgctgtca 1400

tccacccagc cactcagacg tccctccagg aagcttaaag aacctgcttc 1450

tttctgcagt agaagcgtgt gctggaaccc aaagagtact cctttgttag 1500

gcttatggac tgagcagtct ggaccttgca tggcttctgg ggcaaaaata 1550

aatctgaacc aaactgacgg catttgaagc ctttcagcca gttgcttctg 1600

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caggccgact catgatactc tgcatctttc ctacatgaga agcttctctg 1700

ccacaaaagt gacttcaaag actgatgggt tgagctggca gcctatgaga 1750

ttgtggacat ataacaagaa acagaaatgc cctcatgctt attttcatgg 1800

tgattgtggt tttacaagac tgaagaccca gagtatactt tttctttcca 1850

gaaataattt cataccgcct atgaaatatc agataaatta ccttagcttt 1900

tatgtagaat gggttcaaaa gtgagtgttt ctatttgaga aggacacttt 1950

ttcatcatct aaactgattc gcataggtgg ttagaatggc cctcatattg 2000

cctgcctaaa tcttgggttt attagatgaa gtttactgaa tcagaggaat 2050

cagacagagg aggatagctc tttccagaat ccacacttct gacctcagcc 2100

tcggtctcat gaacacccgc tgatctcagg agaacacctg ggctagggaa 2150

tgtggtcgag aaagggcagc ccattgccca gaattaacac atattgtaga 2200
```

```
gacttgtatg caaaggttgg catatttata tgaaaattag ttgctataga 2250

aacatttgtt gcatctgtcc ctctgcctga gcttagaagg ttatagaaaa 2300

agggtattta taaacataaa tgacctttta cttgcattgt atcttatact 2350

aaaggcttta gaaattacaa catatcaggt tcccctacta ctgaagtagc 2400

cttccgtgag aacacaccac atgttaggac tagaagaaaa tgcacaattt 2450

gtaggggttt ggatgaagca gctgtaactg ccctagtgta gtttgaccag 2500

gacattgtcg tgctccttcc aattgtgtaa gattagttag cacatcatct 2550

cctactttag ccatccggtg ttggatttaa gaggacggtg cttctttcta 2600

ttaaagtgct ccatcccta ccatctacac attagcattg tctctagagc 2650

taagacagaa attaaccccg ttcagtcaca aagcagggaa tggttcattt 2700

actcttaatc tttatgccct ggagaagacc tacttgaaca gggcatattt 2750

tttagacttc tgaacatcag tatgttcgag ggtactatga tattttggtt 2800

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aaaatgtatc tgtctttcct 2870
```

<210> 290
<211> 417
<212> PRT
<213> Homosapiens

<400> 290

```
Met Ala Leu Lys Val Leu Leu Glu Gln Glu Lys Thr Phe Phe Thr
 1               5                  10                  15

Leu Leu Val Leu Leu Gly Tyr Leu Ser Cys Lys Val Thr Cys Glu
                20                  25                  30

Ser Gly Asp Cys Arg Gln Gln Glu Phe Arg Asp Arg Ser Gly Asn
                35                  40                  45

Cys Val Pro Cys Asn Gln Cys Gly Pro Gly Met Glu Leu Ser Lys
                50                  55                  60

Glu Cys Gly Phe Gly Tyr Gly Glu Asp Ala Gln Cys Val Thr Cys
                65                  70                  75

Arg Leu His Arg Phe Lys Glu Asp Trp Gly Phe Gln Lys Cys Lys
                80                  85                  90

Pro Cys Leu Asp Cys Ala Val Val Asn Arg Phe Gln Lys Ala Asn
                95                  100                 105

Cys Ser Ala Thr Ser Asp Ala Ile Cys Gly Asp Cys Leu Pro Gly
                110                 115                 120

Phe Tyr Arg Lys Thr Lys Leu Val Gly Phe Gln Asp Met Glu Cys
                125                 130                 135

Val Pro Cys Gly Asp Pro Pro Pro Tyr Glu Pro His Cys Ala
                140                 145                 150
```

349

```
Ser Lys Val Asn Leu Val Lys Ile Ala Ser Thr Ala Ser Ser Pro
                155                 160                 165

Arg Asp Thr Ala Leu Ala Ala Val Ile Cys Ser Ala Leu Ala Thr
                170                 175                 180

Val Leu Leu Ala Leu Leu Ile Leu Cys Val Ile Tyr Cys Lys Arg
                185                 190                 195

Gln Phe Met Glu Lys Lys Pro Ser Trp Ser Leu Arg Ser Gln Asp
                200                 205                 210

Ile Gln Tyr Asn Gly Ser Glu Leu Ser Cys Phe Asp Arg Pro Gln
                215                 220                 225

Leu His Glu Tyr Ala His Arg Ala Cys Cys Gln Cys Arg Arg Asp
                230                 235                 240

Ser Val Gln Thr Cys Gly Pro Val Arg Leu Leu Pro Ser Met Cys
                245                 250                 255

Cys Glu Glu Ala Cys Ser Pro Asn Pro Ala Thr Leu Gly Cys Gly
                260                 265                 270

Val His Ser Ala Ala Ser Leu Gln Ala Arg Asn Ala Gly Pro Ala
                275                 280                 285

Gly Glu Met Val Pro Thr Phe Phe Gly Ser Leu Thr Gln Ser Ile
                290                 295                 300

Cys Gly Glu Phe Ser Asp Ala Trp Pro Leu Met Gln Asn Pro Met
                305                 310                 315

Gly Gly Asp Asn Ile Ser Phe Cys Asp Ser Tyr Pro Glu Leu Thr
                320                 325                 330

Gly Glu Asp Ile His Ser Leu Asn Pro Glu Leu Glu Ser Ser Thr
                335                 340                 345

Ser Leu Asp Ser Asn Ser Ser Gln Asp Leu Val Gly Gly Ala Val
                350                 355                 360

Pro Val Gln Ser His Ser Glu Asn Phe Thr Ala Ala Thr Asp Leu
                365                 370                 375

Ser Arg Tyr Asn Asn Thr Leu Val Glu Ser Ala Ser Thr Gln Asp
                380                 385                 390

Ala Leu Thr Met Arg Ser Gln Leu Asp Gln Glu Ser Gly Ala Val
                395                 400                 405

Ile His Pro Ala Thr Gln Thr Ser Leu Gln Glu Ala
                410                 415
```

<210> 291
<211> 2395
<212> DNA
<213> Homosapiens

<400> 291
 cctggagccg gaagcgcggc tgcagcaggg cgaggctcca ggtggggtcg 50

 gttccgcatc cagcctagcg tgtccacgat gcggctgggc tccgggactt 100

350

```
tcgctacctg ttgcgtagcg atcgaggtgc tagggatcgc ggtcttcctt 150

cggggattct tcccggctcc cgttcgttcc tctgccagag cggaacacgg 200

agcggagccc ccagcgcccg aaccctcggc tggagccagt tctaactgga 250

ccacgctgcc accacctctc ttcagtaaag ttgttattgt tctgatagat 300

gccttgagag atgattttgt gtttgggtca aagggtgtga aatttatgcc 350

ctacacaact taccttgtgg aaaaaggagc atctcacagt tttgtggctg 400

aagcaaagcc acctacagtt actatgcctc gaatcaaggc attgatgacg 450

gggagccttc ctggctttgt cgacgtcatc aggaacctca attctcctgc 500

actgctggaa gacagtgtga taagacaagc aaaagcagct ggaaaaagaa 550

tagtctttta tggagatgaa acctgggtta aattattccc aaagcatttt 600

gtggaatatg atggaacaac ctcatttttc gtgtcagatt acacagaggt 650

ggataataat gtcacgaggc atttggataa agtattaaaa agaggagatt 700

gggacatatt aatcctccac tacctggggc tggaccacat tggccacatt 750

tcagggccca acagcccct gattgggcag aagctgagcg agatggacag 800

cgtgctgatg aagatccaca cctcactgca gtcgaaggag agagagacgc 850

ctttacccaa tttgctggtt ctttgtggtg accatggcat gtctgaaaca 900

ggaagtcacg gggcctcctc caccgaggag gtgaatacac ctctgatttt 950

aatcagttct gcgtttgaaa ggaaacccgg tgatatccga catccaaagc 1000

acgtccaata gacggatgtg gctgcgacac tggcgatagc acttggctta 1050

ccgattccaa aagacagtgt agggagcctc ctattcccag ttgtggaagg 1100

aagaccaatg agagagcagt tgagattttt acatttgaat acagtgcagc 1150

ttagtaaact gttgcaagag aatgtgccgt catatgaaaa agatcctggg 1200

tttgagcagt ttaaaatgtc agaaagattg catgggaact ggatcagact 1250

gtacttggag gaaaagcatt cagaagtcct attcaacctg ggctccaagg 1300

ttctcaggca gtacctggat gctctgaaga cgctgagctt gtccctgagt 1350

gcacaagtgg cccagttctc accctgctcc tgctcagcgt cccacaggca 1400

ctgcacagaa aggctgagct ggaagtccca ctgtcatctc ctgggttttc 1450

tctgctcttt tatttggtga tcctggttct ttcggccgtt cacgtcattg 1500

tgtgcacctc agctgaaagt tcgtgctact tctgtggcct ctcgtggctg 1550

gcggcaggct gcctttcgtt taccagactc tggttgaaca cctggtgtgt 1600

gccaagtgct ggcagtgccc tggacagggg gcctcaggga aggacgtgga 1650

gcagccttat cccaggcctc tgggtgtccc gacacaggtg ttcacatctg 1700
```

351

```
tgctgtcagg tcagatgcct cagttcttgg aaagctaggt tcctgcgact 1750

gttaccaagg tgattgtaaa gagctggcgg tcacagagga acaagccccc 1800

cagctgaggg ggtgtgtgaa tcggacagcc tcccagcaga ggtgtgggag 1850

ctgcagctga gggaagaaga gacaatcggc ctggacactc aggagggtca 1900

aaaggagact tggtcgcacc actcatcctg ccacccccag aatgcatcct 1950

gcctcatcag gtccagattt ctttccaagg cggacgtttt ctgttggaat 2000

tcttagtcct tggcctcgga caccttcatt cgttagctgg ggagtggtgg 2050

tgaggcagtg aagaagaggc ggatggtcac actcagatcc acagagccca 2100

ggatcaaggg acccactgca gtggcagcag gactgttggg cccccacccc 2150

aaccctgcac agccctcatc ccctcttggc ttgagccgtc agaggccctg 2200

tgctgagtgt ctgaccgaga cactcacagc tttgtcatca gggcacaggc 2250

ttcctcggag ccaggatgat ctgtgccacg cttgcacctc gggcccatct 2300

gggctcatgc tctctctcct gctattgaat tagtacctag ctgcacacag 2350

tatgtagtta ccaaaagaat aaacggcaat aattgagaaa aaaaa 2395
```

<210> 292
<211> 310
<212> PRT
<213> Homosapiens

<400> 292

```
Met Arg Leu Gly Ser Gly Thr Phe Ala Thr Cys Cys Val Ala Ile
 1               5                  10                  . 15

Glu Val Leu Gly Ile Ala Val Phe Leu Arg Gly Phe Phe Pro Ala
                 20                  25                  30

Pro Val Arg Ser Ser Ala Arg Ala Glu His Gly Ala Glu Pro Pro
                 35                  40                  45

Ala Pro Glu Pro Ser Ala Gly Ala Ser Ser Asn Trp Thr Thr Leu
                 50                  55                  60

Pro Pro Pro Leu Phe Ser Lys Val Val Ile Val Leu Ile Asp Ala
                 65                  70                  75

Leu Arg Asp Asp Phe Val Phe Gly Ser Lys Gly Val Lys Phe Met
                 80                  85                  90

Pro Tyr Thr Thr Tyr Leu Val Glu Lys Gly Ala Ser His Ser Phe
                 95                 100                 105

Val Ala Glu Ala Lys Pro Pro Thr Val Thr Met Pro Arg Ile Lys
                110                 115                 120

Ala Leu Met Thr Gly Ser Leu Pro Gly Phe Val Asp Val Ile Arg
                125                 130                 135

Asn Leu Asn Ser Pro Ala Leu Leu Glu Asp Ser Val Ile Arg Gln
                140                 145                 150
```

352

```
Ala Lys Ala Ala Gly Lys Arg Ile Val Phe Tyr Gly Asp Glu Thr
            155             160             165

Trp Val Lys Leu Phe Pro Lys His Phe Val Glu Tyr Asp Gly Thr
            170             175             180

Thr Ser Phe Phe Val Ser Asp Tyr Thr Glu Val Asp Asn Asn Val
            185             190             195

Thr Arg His Leu Asp Lys Val Leu Lys Arg Gly Asp Trp Asp Ile
            200             205             210

Leu Ile Leu His Tyr Leu Gly Leu Asp His Ile Gly His Ile Ser
            215             220             225

Gly Pro Asn Ser Pro Leu Ile Gly Gln Lys Leu Ser Glu Met Asp
            230             235             240

Ser Val Leu Met Lys Ile His Thr Ser Leu Gln Ser Lys Glu Arg
            245             250             255

Glu Thr Pro Leu Pro Asn Leu Leu Val Leu Cys Gly Asp His Gly
            260             265             270


Met Ser Glu Thr Gly Ser His Gly Ala Ser Ser Thr Glu Glu Val
            275             280             285

Asn Thr Pro Leu Ile Leu Ile Ser Ser Ala Phe Glu Arg Lys Pro
            290             295             300

Gly Asp Ile Arg His Pro Lys His Val Gln
            305             310
```

&lt;210&gt; 293
&lt;211&gt; 918
&lt;212&gt; DNA
&lt;213&gt; Homosapiens

&lt;400&gt; 293
```
agccaggcag cacatcacag cgggaggagc tgtcccaggt ggcccagctc 50

agcaatggca atgggggtcc ccagagtcat tctgctctgc ctctttgggg 100

ctgcgctctg cctgacaggg tcccaagccc tgcagtgcta cagctttgag 150

cacacctact ttggcccctt tgacctcagg gccatgaagc tgcccagcat 200

ctcctgtcct catgagtgct ttgaggctat cctgtctctg gacaccgggt 250

atcgcgcgcc ggtgaccctg gtgcggaagg gctgctggac cgggcctcct 300

gcgggccaga cgcaatcgaa cccggacgcg ctgccgccag actactcggt 350

ggtgcgcggc tgcacaactg acaaatgcaa cgcccacctc atgactcatg 400

acgccctccc caacctgagc caagcacccg acccgccgac gctcagcggc 450

gccgagtgct acgcctgtat cggggtccac caggatgact gcgctatcgg 500

caggtcccga cgagtccagt gtcaccagga ccagaccgcc tgcttccagg 550

gcagtggcag aatgacagtt ggcaatttct cagtccctgt gtacatcaga 600
```

353

```
acctgccacc ggccctcctg caccaccgag ggcaccacca gcccctggac  650

agccatcgac ctccagggct cctgctgtga ggggtacctc tgcaacagga  700

aatccatgac ccagcccttc accagtgctt cagccaccac ccctccccga  750

gcactacagg tcctggccct gctcctccca gtcctcctgc tggtggggct  800

ctcagcatag accgcccctc caggatgctg gggacagggc tcacacacct  850

cattcttgct gcttcagccc ctatcacata gctcactgga aaatgatgtt  900

aaagtaagaa ttgcaaaa 918
```

```
<210> 294
<211> 251
<212> PRT
<213> Homosapiens

<400> 294
Met Ala Met Gly Val Pro Arg Val Ile Leu Leu Cys Leu Phe Gly
 1               5                  10                  15


Ala Ala Leu Cys Leu Thr Gly Ser Gln Ala Leu Gln Cys Tyr Ser
                20                  25                  30

Phe Glu His Thr Tyr Phe Gly Pro Phe Asp Leu Arg Ala Met Lys
                35                  40                  45

Leu Pro Ser Ile Ser Cys Pro His Glu Cys Phe Glu Ala Ile Leu
                50                  55                  60

Ser Leu Asp Thr Gly Tyr Arg Ala Pro Val Thr Leu Val Arg Lys
                65                  70                  75

Gly Cys Trp Thr Gly Pro Pro Ala Gly Gln Thr Gln Ser Asn Pro
                80                  85                  90

Asp Ala Leu Pro Pro Asp Tyr Ser Val Val Arg Gly Cys Thr Thr
                95                  100                 105

Asp Lys Cys Asn Ala His Leu Met Thr His Asp Ala Leu Pro Asn
                110                 115                 120

Leu Ser Gln Ala Pro Asp Pro Pro Thr Leu Ser Gly Ala Glu Cys
                125                 130                 135

Tyr Ala Cys Ile Gly Val His Gln Asp Asp Cys Ala Ile Gly Arg
                140                 145                 150

Ser Arg Arg Val Gln Cys His Gln Asp Gln Thr Ala Cys Phe Gln
                155                 160                 165

Gly Ser Gly Arg Met Thr Val Gly Asn Phe Ser Val Pro Val Tyr
                170                 175                 180

Ile Arg Thr Cys His Arg Pro Ser Cys Thr Thr Glu Gly Thr Thr
                185                 190                 195

Ser Pro Trp Thr Ala Ile Asp Leu Gln Gly Ser Cys Cys Glu Gly
                200                 205                 210
```

354

```
Tyr Leu Cys Asn Arg Lys Ser Met Thr Gln Pro Phe Thr Ser Ala
            215             220                     225

Ser Ala Thr Thr Pro Pro Arg Ala Leu Gln Val Leu Ala Leu Leu
            230             235                     240

Leu Pro Val Leu Leu Leu Val Gly Leu Ser Ala
            245                 250
```

<210> 295
<211> 846
<212> DNA
<213> Homosapiens

<400> 295

```
aatcggctga ttctgcatct ggaaactgcc ttcatcttga aagaaaagct 50

ccaggtccct tctccagcca cccagcccca agatggtgat gctgctgctg 100

ctgctttccg cactggctgg cctcttcggt gcggcagagg gacaagcatt 150

tcatcttggg aagtgcccca atcctccggt gcaggagaat tttgacgtga 200

ataagtatct cggaagatgg tacgaaattg agaagatccc aacaaccttt 250

gagaatggac gctgcatcca ggccaactac tcactaatgg aaaacggaaa 300

gatcaaagtg ttaaaccagg agttgagagc tgatggaact gtgaatcaaa 350

tcgaaggtga agccacccca gttaacctca cagagcctgc caagctggaa 400

gttaagtttt cctggtttat gccatcggca ccgtactgga tcctggccac 450

cgactatgag aactatgccc tcgtgtattc ctgtacctgc atcatccaac 500

tttttcacgt ggattttgct tggatcttgg caagaaaccc taatctccct 550

ccagaaacag tggactctct aaaaaatatc ctgacttcta ataacattga 600

tgtcaagaaa atgacggtca cagaccaggt gaactgcccc aagctctcgt 650

aaccaggttc tacagggagg ctgcacccac tccatgttac ttctgcttcg 700

ctttccccta ccccaccccc ccccataaa gacaaaccaa tcaaccacga 750

caaaggaagt tgacctgaac atgtaaccat gccctaccct gttaccttgc 800

tagctgcaaa ataaacttgt tgctgacctg ctgtgctcgc aaaaaa 846
```

<210> 296
<211> 189
<212> PRT
<213> Homosapiens

<400> 296

```
Met Val Met Leu Leu Leu Leu Leu Ser Ala Leu Ala Gly Leu Phe
  1             5                 10                      15

Gly Ala Ala Glu Gly Gln Ala Phe His Leu Gly Lys Cys Pro Asn
                20                  25                      30

Pro Pro Val Gln Glu Asn Phe Asp Val Asn Lys Tyr Leu Gly Arg
                35                  40                      45
```

```
Trp Tyr Glu Ile Glu Lys Ile Pro Thr Thr Phe Glu Asn Gly Arg
             50              55              60

Cys Ile Gln Ala Asn Tyr Ser Leu Met Glu Asn Gly Lys Ile Lys
             65              70              75

Val Leu Asn Gln Glu Leu Arg Ala Asp Gly Thr Val Asn Gln Ile
             80              85              90

Glu Gly Glu Ala Thr Pro Val Asn Leu Thr Glu Pro Ala Lys Leu
             95             100             105

Glu Val Lys Phe Ser Trp Phe Met Pro Ser Ala Pro Tyr Trp Ile
            110             115             120

Leu Ala Thr Asp Tyr Glu Asn Tyr Ala Leu Val Tyr Ser Cys Thr
            125             130             135

Cys Ile Ile Gln Leu Phe His Val Asp Phe Ala Trp Ile Leu Ala
            140             145             150

Arg Asn Pro Asn Leu Pro Pro Glu Thr Val Asp Ser Leu Lys Asn
            155             160             165

Ile Leu Thr Ser Asn Asn Ile Asp Val Lys Lys Met Thr Val Thr
            170             175             180

Asp Gln Val Asn Cys Pro Lys Leu Ser
            185
```

<210> 297
<211> 1088
<212> DNA
<213> Homosapiens

<400> 297

```
gggtgattga actaaacctt cgccgcaccg agtttgcagt acggccgtca  50

cccgcaccgc tgcctgcttg cggttggaga aatcaaggcc ctaccgggcc  100

tccgtagtca cctctctata gtgggcgtgg ccgaggccgg ggtgaccctg  150

ccggagcctc cgctgccagc gacatgttca aggtaattca gaggtccgtg  200

gggccagcca gcctgagctt gctcaccttc aaagtctatg cagcaccaaa  250

aaaggactca cctcccaaaa attccgtgaa ggttgatgag ctttcactct  300

actcagttcc tgagggtcaa tcgaagtatg tggaggaggc aaggagccag  350

cttgaagaaa gcatctcaca gctccgacac tattgcgagc catacacaac  400

ctggtgtcag gaaacgtact cccaaactaa gcccaagatg caaagtttgg  450

ttcaatgggg gttagacagc tatgactatc tccaaaatgc acctcctgga  500

ttttttccga gacttggtgt tattggtttt gctggcctta ttggactcct  550

tttggctaga ggttcaaaaa taaagaagct agtgtatccg cctggtttca  600

tgggattagc tgcctccctc tattatccac aacaagccat cgtgtttgcc  650

caggtcagtg gggagagatt atatgactgg ggtttacgag gatatatagt  700
```

```
catagaagat ttgtggaagg agaactttca aaagccagga aatgtgaaga 750

attcacctgg aactaagtag aaaactccat gctctgccat cttaatcagt 800

tataggtaaa cattggaaac tccatagaat aaatcagtat ttctacagaa 850

aaatggcata gaagtcagta ttgaatgtat taaattggct ttcttcttca 900

ggaaaaacta gaccagacct ctgttatctt ctgtgaaatc atcctacaag 950

caaactaacc tggaatccct tcacctagag ataatgtaca agccttagaa 1000

ctcctcattc tcatgttgct atttatgtac ctaattaaaa cccaagttta 1050

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 1088
```

<210> 298
<211> 198
<212> PRT
<213> Homosapiens

<400> 298

```
Met Phe Lys Val Ile Gln Arg Ser Val Gly Pro Ala Ser Leu Ser
  1               5                  10                  15

Leu Leu Thr Phe Lys Val Tyr Ala Ala Pro Lys Lys Asp Ser Pro
                 20                  25                  30

Pro Lys Asn Ser Val Lys Val Asp Glu Leu Ser Leu Tyr Ser Val
                 35                  40                  45

Pro Glu Gly Gln Ser Lys Tyr Val Glu Glu Ala Arg Ser Gln Leu
                 50                  55                  60

Glu Glu Ser Ile Ser Gln Leu Arg His Tyr Cys Glu Pro Tyr Thr
                 65                  70                  75

Thr Trp Cys Gln Glu Thr Tyr Ser Gln Thr Lys Pro Lys Met Gln
                 80                  85                  90

Ser Leu Val Gln Trp Gly Leu Asp Ser Tyr Asp Tyr Leu Gln Asn
                 95                 100                 105

Ala Pro Pro Gly Phe Phe Pro Arg Leu Gly Val Ile Gly Phe Ala
                110                 115                 120

Gly Leu Ile Gly Leu Leu Leu Ala Arg Gly Ser Lys Ile Lys Lys
                125                 130                 135

Leu Val Tyr Pro Pro Gly Phe Met Gly Leu Ala Ala Ser Leu Tyr
                140                 145                 150

Tyr Pro Gln Gln Ala Ile Val Phe Ala Gln Val Ser Gly Glu Arg
                155                 160                 165

Leu Tyr Asp Trp Gly Leu Arg Gly Tyr Ile Val Ile Glu Asp Leu
                170                 175                 180

Trp Lys Glu Asn Phe Gln Lys Pro Gly Asn Val Lys Asn Ser Pro
                185                 190                 195

Gly Thr Lys
```

357

<210> 299
<211> 1328
<212> DNA
<213> Homosapiens

<400> 299
```
ccgctgagat gtacgaactt ccggttctcc gggcagctgc cactgctgta 50

gcttctgcca cctgccacga ccgggcctct ccctggcgtt tggtcacctc 100

tgcttcattc tccaccgcgc ctatggtccc tcttggagcc agcgtggcgg 150

gcctggcggc tcccgggtgg tgagagagcg gtccgggaac gatgaaggcc 200

tcgcagtgct gctgctgtct cagccacctc ttggcttccg tcctcctcct 250

gctgttgctg cctgaactaa gcgggcccct ggcagtcctg ctgcaggcag 300

ccgaggccgc gccaggtctt gggcctcctg accctagacc acggacatta 350

ccgccgctgc caccgggccc tacccctgcc cagcagccgg gccgtggtct 400

ggctgaagct gcggggccgc ggggctccga gggaggcaat ggcagcaacc 450

ctgtggccgg gcttgagacg gacgatcacg gagggaaggc cggggaaggc 500

tcggtgggtg gcggccttgc tgtgagcccc aaccctggcg acaagcccat 550

gacccagcgg gccctgaccg tgttgatggt ggtgagcggc gcggtgctgg 600

tgtacttcgt ggtcaggacg gtcaggatga gaagaagaaa ccgaaagact 650

aggagatatg gagttttgga cactaacata gaaaatatgg aattgacacc 700

tttagaacag gatgatgagg atgatgacaa cacgttgttt gatgccaatc 750

atcctcgaag ataagaatgt gcctttgat gaaagaactt tatctttcta 800

caatgaagag tggaatttct atgtttaagg aataagaagc cactatatca 850

atgttggggg ggtatttaag ttacatatat tttaacaacc tttaatttgc 900

tgttgcaata aataccgtat ccttttatta tatctttata tgtatagaag 950

tactctatta atgggctcag agatgttggg gataaagtat actgtaataa 1000

tttatctgtt tgaaaattac tataaaacgg tgttttctgg tcggtttttg 1050

tttcctgctt accatatgat tgtaaattgt tttatgtatt aatcagttaa 1100

tgctaattat ttttgctgat gtcatatgtt aaagagctat aaattccaac 1150

aaccaactgg tgtgtaaaaa taatttaaaa tttcctttac tgaaaggtat 1200

ttcccatttt tgtggggaaa agaagccaaa tttattactt tgtgttgggg 1250

tttttaaaat attaagaaat gtctaagtta ttgtttgcaa aacaataaat 1300

atgattttaa attctcttaa aaaaaaaa 1328
```

<210> 300
<211> 190

```
<212> PRT
<213> Homosapiens

<400> 300
 Met Lys Ala Ser Gln Cys Cys Cys Cys Leu Ser His Leu Leu Ala
  1               5                  10                      15

 Ser Val Leu Leu Leu Leu Leu Leu Pro Glu Leu Ser Gly Pro Leu
                 20                  25                      30

 Ala Val Leu Leu Gln Ala Ala Glu Ala Ala Pro Gly Leu Gly Pro
                 35                  40                      45

 Pro Asp Pro Arg Pro Arg Thr Leu Pro Pro Leu Pro Pro Gly Pro
                 50                  55                      60

 Thr Pro Ala Gln Gln Pro Gly Arg Gly Leu Ala Glu Ala Ala Gly
                 65                  70                      75

 Pro Arg Gly Ser Glu Gly Gly Asn Gly Ser Asn Pro Val Ala Gly
                 80                  85                      90

 Leu Glu Thr Asp Asp His Gly Gly Lys Ala Gly Glu Gly Ser Val
                 95                 100                     105

 Gly Gly Gly Leu Ala Val Ser Pro Asn Pro Gly Asp Lys Pro Met
                110                 115                     120

 Thr Gln Arg Ala Leu Thr Val Leu Met Val Val Ser Gly Ala Val
                125                 130                     135

 Leu Val Tyr Phe Val Val Arg Thr Val Arg Met Arg Arg Arg Asn
                140                 145                     150

 Arg Lys Thr Arg Arg Tyr Gly Val Leu Asp Thr Asn Ile Glu Asn
                155                 160                     165

 Met Glu Leu Thr Pro Leu Glu Gln Asp Asp Glu Asp Asp Asp Asn
                170                 175                     180

 Thr Leu Phe Asp Ala Asn His Pro Arg Arg
                185                 190

<210> 301
<211> 1470
<212> DNA
<213> Homosapiens

<400> 301
 ctcggctgga tttaaggttg ccgctagccg cctgggaatt taagggaccc 50

 acactacctt cccgaagttg aaggcaagcg gtgattgttt gtagacggcg 100

 ctttgtcatg ggacctgtgc ggttgggaat attgcttttc cttttttttgg 150

 ccgtgcacga ggcttgggct gggatgttga aggaggagga cgatgacaca 200

 gaacgcttgc ccagcaaatg cgaagtgtgt aagctgctga gcacagagct 250

 acaggcggaa ctgagtcgca ccggtcgatc tcgagaggtg ctggagctgg 300

 ggcaggtgct ggatacaggc aagaggaaga gacacgtgcc ttacagcgtt 350
```

```
tcagagacaa ggctggaaga ggccttagag aatttatgtg agcggatcct 400

ggactatagt gttcacgctg agcgcaaggg ctcactgaga tatgccaagg 450

gtcagagtca gaccatggca acactgaaag gcctagtgca gaagggggtg 500

aaggtggatc tggggatccc tctggagctt tgggatgagc ccagcgtgga 550

ggtcacatac ctcaagaagc agtgtgagac catgttggag gagtttgaag 600

acattgtggg agactggtac ttccaccatc aggagcagcc cctacaaaat 650

tttctctgtg aaggtcatgt gctcccagct gctgaaactg catgtctaca 700

ggaaacttgg actggaaagg agatcacaga tggggaagag aaaacagaag 750

gggaggaaga gcaggaggag gaggaggaag aggaggaaga ggaagggga 800

gacaagatga ccaagacagg aagccacccc aaacttgacc gagaagatct 850

ttgacccttg cctttgagcc cccaggaggg gaagggatca tggagagccc 900

tctaaagcct gcactctccc tgctccacag ctttcagggt gtgtttatga 950

gtgactccac ccaagcttgt agctgttctc tcccatctaa cctcaggcaa 1000

gatcctggtg aaacagcatg acatggcttc tggggtggag ggtgggggtg 1050

gaggtcctgc tcctagagat gaactctatc agccccttta ttggcaggt 1100

gtatgtgctg acagtactga aagctttcct ctttaactga tcccacccccc 1150

acccaaaagt cagcagtggc actggagctg tgggctttgg ggaagtcact 1200

tagctcctta aggtctgttt ttagacccctt ccaaggaaga ggccagaacg 1250

gacattctct gcgatctata tacattgcct gtatccagga ggctacacac 1300

cagcaaaccg tgaaggagaa tgggacactg ggtcatggcc tggagttgct 1350

gataatttag gtgggataga tacttggtct acttaagctc aatgtaaccc 1400

agagcccacc atatagtttt ataggtgctc aactttctat atcgctatta 1450

aacttttttc ttttttttcta 1470
```

```
<210> 302
<211> 248
<212> PRT
<213> Homosapiens

<400> 302
 Met Gly Pro Val Arg Leu Gly Ile Leu Leu Phe Leu Phe Leu Ala
  1               5                  10                  15

 Val His Glu Ala Trp Ala Gly Met Leu Lys Glu Glu Asp Asp
                  20                  25                  30

 Thr Glu Arg Leu Pro Ser Lys Cys Glu Val Cys Lys Leu Leu Ser
                  35                  40                  45

 Thr Glu Leu Gln Ala Glu Leu Ser Arg Thr Gly Arg Ser Arg Glu
                  50                  55                  60
```

360

```
Val Leu Glu Leu Gly Gln Val Leu Asp Thr Gly Lys Arg Lys Arg
                 65              70                      75

His Val Pro Tyr Ser Val Ser Glu Thr Arg Leu Glu Glu Ala Leu
                 80              85                      90

Glu Asn Leu Cys Glu Arg Ile Leu Asp Tyr Ser Val His Ala Glu
                 95             100                     105

Arg Lys Gly Ser Leu Arg Tyr Ala Lys Gly Gln Ser Gln Thr Met
                110             115                     120

Ala Thr Leu Lys Gly Leu Val Gln Lys Gly Val Lys Val Asp Leu
                125             130                     135

Gly Ile Pro Leu Glu Leu Trp Asp Glu Pro Ser Val Glu Val Thr
                140             145                     150

Tyr Leu Lys Lys Gln Cys Glu Thr Met Leu Glu Glu Phe Glu Asp
                155             160                     165

Ile Val Gly Asp Trp Tyr Phe His His Gln Glu Gln Pro Leu Gln
                170             175                     180

Asn Phe Leu Cys Glu Gly His Val Leu Pro Ala Ala Glu Thr Ala
                185             190                     195

Cys Leu Gln Glu Thr Trp Thr Gly Lys Glu Ile Thr Asp Gly Glu
                200             205                     210

Glu Lys Thr Glu Gly Glu Glu Glu Gln Glu Glu Glu Glu Glu Glu
                215             220                     225

Glu Glu Glu Glu Gly Gly Asp Lys Met Thr Lys Thr Gly Ser His
                230             235                     240

Pro Lys Leu Asp Arg Glu Asp Leu
                245
```

<210> 303
<211> 633
<212> DNA
<213> Homosapiens

<400> 303

```
ctcctgcact aggctctcag ccagggatga tgcgctgctg ccgccgccgc  50

tgctgctgcc ggcaaccacc ccatgccctg aggccgttgc tgttgctgcc 100

cctcgtcctt ttacctcccc tggcagcagc tgcagcgggc ccaaaccgat 150

gtgacaccat ataccagggc ttcgccgagt gtctcatccg cttggggggac 200

agcatgggcc gcggaggcga gctggagacc atctgcaggt cttggaatga 250

cttccatgcc tgtgcctctc aggtcctgtc aggctgtccg gaggaggcag 300

ctgcagtgtg ggaatcacta cagcaagaag ctcgccaggc cccccgtccg 350

aataacttgc acactctgtg cggtgccccg gtgcatgttc gggagcgcgg 400

cacaggctcc gaaaccaacc aggagacgct gcgggctaca gcgcctgcac 450
```

361

```
tccccatggc ccctgcgccc ccactgctgg cggctgctct ggctctggcc 500

tacctcctga ggcctctggc ctagcttgtt gggttgggta gcagcgcccg 550

tacctccagc cctgctctgg cggtggttgt ccaggctctg cagagcgcag 600

caggctttt cattaaaggt atttatattt gta 633
```

<210> 304
<211> 165
<212> PRT
<213> Homosapiens

<400> 304

```
Met Met Arg Cys Cys Arg Arg Arg Cys Cys Cys Arg Gln Pro Pro
 1               5                  10                  15

His Ala Leu Arg Pro Leu Leu Leu Leu Pro Leu Val Leu Leu Pro
            20                  25                  30

Pro Leu Ala Ala Ala Ala Ala Gly Pro Asn Arg Cys Asp Thr Ile
            35                  40                  45

Tyr Gln Gly Phe Ala Glu Cys Leu Ile Arg Leu Gly Asp Ser Met
            50                  55                  60

Gly Arg Gly Gly Glu Leu Glu Thr Ile Cys Arg Ser Trp Asn Asp
            65                  70                  75

Phe His Ala Cys Ala Ser Gln Val Leu Ser Gly Cys Pro Glu Glu
            80                  85                  90

Ala Ala Ala Val Trp Glu Ser Leu Gln Gln Glu Ala Arg Gln Ala
            95                  100                 105

Pro Arg Pro Asn Asn Leu His Thr Leu Cys Gly Ala Pro Val His
            110                 115                 120

Val Arg Glu Arg Gly Thr Gly Ser Glu Thr Asn Gln Glu Thr Leu
            125                 130                 135

Arg Ala Thr Ala Pro Ala Leu Pro Met Ala Pro Ala Pro Pro Leu
            140                 145                 150

Leu Ala Ala Ala Leu Ala Leu Ala Tyr Leu Leu Arg Pro Leu Ala
            155                 160                 165
```

<210> 305
<211> 890
<212> DNA
<213> Homosapiens

<400> 305

```
aagtacttgt gtccgggtgg tggactggat tagctgcgga gccctggaag 50

ctgcctgtcc ttctccctgt gcttaaccag aggtgcccat gggttggaca 100

atgaggctgg tcacagcagc actgttactg ggtctcatga tggtggtcac 150

tggagacgag gatgagaaca gcccgtgtgc ccatgaggcc ctcttggacg 200

aggacaccct ctttttgccag ggccttgaag ttttctaccc agagttgggg 250
```

```
aacattggct gcaaggttgt tcctgattgt aacaactaca gacagaagat 300

cacctcctgg atggagccga tagtcaagtt cccgggggcc gtggacggcg 350

caacctatat cctggtgatg gtggatccag atgcccctag cagagcagaa 400

cccagacaga gattctggag acattggctg gtaacagata tcaagggcgc 450

cgacctgaag aaagggaaga ttcagggcca ggagttatca gcctaccagg 500

ctccctcccc accggcacac agtggcttcc atcgctacca gttctttgtc 550

tatcttcagg aaggaaaagt catctctctc cttcccaagg aaaacaaaac 600

tcgaggctct tggaaaatgg acagatttct gaaccgcttc cacctgggcg 650

aacctgaagc aagcacccag ttcatgaccc agaactacca ggactcacca 700

accctccagg ctcccagagg aagggccagc gagcccaagc acaaaaccag 750

gcagagatag ctgcctgcta gatagccggc tttgccatcc gggcatgtgg 800

ccacactgct caccaccgac gatgtgggta tggaacccccc tctggataca 850

gaacccccttc ttttccaaat taaaaaaaaa aatcatcaaa 890
```

<210> 306
<211> 223
<212> PRT
<213> Homosapiens

<400> 306

```
Met Gly Trp Thr Met Arg Leu Val Thr Ala Ala Leu Leu Leu Gly
 1               5                  10                  15

Leu Met Met Val Val Thr Gly Asp Glu Asp Glu Asn Ser Pro Cys
                20                  25                  30

Ala His Glu Ala Leu Leu Asp Glu Asp Thr Leu Phe Cys Gln Gly
                35                  40                  45

Leu Glu Val Phe Tyr Pro Glu Leu Gly Asn Ile Gly Cys Lys Val
                50                  55                  60

Val Pro Asp Cys Asn Asn Tyr Arg Gln Lys Ile Thr Ser Trp Met
                65                  70                  75

Glu Pro Ile Val Lys Phe Pro Gly Ala Val Asp Gly Ala Thr Tyr
                80                  85                  90

Ile Leu Val Met Val Asp Pro Asp Ala Pro Ser Arg Ala Glu Pro
                95                  100                 105

Arg Gln Arg Phe Trp Arg His Trp Leu Val Thr Asp Ile Lys Gly
                110                 115                 120

Ala Asp Leu Lys Lys Gly Lys Ile Gln Gly Gln Glu Leu Ser Ala
                125                 130                 135

Tyr Gln Ala Pro Ser Pro Pro Ala His Ser Gly Phe His Arg Tyr
                140                 145                 150

Gln Phe Phe Val Tyr Leu Gln Glu Gly Lys Val Ile Ser Leu Leu
```

```
                   155                    160                    165
     Pro Lys Glu Asn Lys Thr Arg Gly Ser Trp Lys Met Asp Arg Phe
                       170                    175                    180

     Leu Asn Arg Phe His Leu Gly Glu Pro Glu Ala Ser Thr Gln Phe
                       185                    190                    195

     Met Thr Gln Asn Tyr Gln Asp Ser Pro Thr Leu Gln Ala Pro Arg
                       200                    205                    210

     Gly Arg Ala Ser Glu Pro Lys His Lys Thr Arg Gln Arg
                       215                    220
```

<210> 307
<211> 924
<212> DNA
<213> Homosapiens

<400> 307

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 aaggagcagc ccgcaagcac caagtgagag gcatgaagtt acagtgtgtt 50

 tccctttggc tcctgggtac aatactgata ttgtgctcag tagacaacca 100

 cggtctcagg agatgtctga tttccacaga catgcaccat atagaagaga 150

 gtttccaaga aatcaaaaga gccatccaag ctaaggacac cttcccaaat 200

 gtcactatcc tgtccacatt ggagactctg cagatcatta gcccttaga 250

 tgtgtgctgc gtgaccaaga acctcctggc gttctacgtg gacagggtgt 300

 tcaaggatca tcaggagcca aaccccaaaa tcttgagaaa aatcagcagc 350

 attgccaact ctttcctcta catgcagaaa actctgcggc aatgtcagga 400

 acagaggcag tgtcactgca ggcaggaagc caccaatgcc accagagtca 450

 tccatgacaa ctatgatcag ctggaggtcc acgctgctgc cattaaatcc 500

 ctgggagagc tcgacgtctt tctagcctgg attaataaga atcatgaagt 550

 aatgttctca gcttgatgac aaggaacctg tatagtgatc cagggatgaa 600

 caccccctgt gcggtttact gtgggagaca gcccaccttg aaggggaagg 650

 agatggggaa ggccccttgc agctgaaagt cccactggct ggcctcaggc 700

 tgtcttattc cgcttgaaaa taggcaaaaa gtctactgtg gtatttgtaa 750

 taaactctat ctgctgaaag ggcctgcagg ccatcctggg agtaaagggc 800

 tgccttccca tctaatttat tgtaaagtca tatagtccat gtctgtgatg 850

 tgagccaagt gatatcctgt agtacacatt gtactgagtg gtttttctga 900

 ataaattcca tattttacct atga 924
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<210> 308
<211> 177
<212> PRT
<213> Homosapiens

<400> 308
Met Lys Leu Gln Cys Val Ser Leu Trp Leu Leu Gly Thr Ile Leu
 1               5                  10                  15

Ile Leu Cys Ser Val Asp Asn His Gly Leu Arg Arg Cys Leu Ile
                20                  25                  30

Ser Thr Asp Met His His Ile Glu Glu Ser Phe Gln Glu Ile Lys
                35                  40                  45

Arg Ala Ile Gln Ala Lys Asp Thr Phe Pro Asn Val Thr Ile Leu
                50                  55                  60

Ser Thr Leu Glu Thr Leu Gln Ile Ile Lys Pro Leu Asp Val Cys
                65                  70                  75

Cys Val Thr Lys Asn Leu Leu Ala Phe Tyr Val Asp Arg Val Phe
                80                  85                  90

Lys Asp His Gln Glu Pro Asn Pro Lys Ile Leu Arg Lys Ile Ser
                95                  100                 105

Ser Ile Ala Asn Ser Phe Leu Tyr Met Gln Lys Thr Leu Arg Gln
                110                 115                 120

Cys Gln Glu Gln Arg Gln Cys His Cys Arg Gln Glu Ala Thr Asn
                125                 130                 135

Ala Thr Arg Val Ile His Asp Asn Tyr Asp Gln Leu Glu Val His
                140                 145                 150

Ala Ala Ala Ile Lys Ser Leu Gly Glu Leu Asp Val Phe Leu Ala
                155                 160                 165

Trp Ile Asn Lys Asn His Glu Val Met Phe Ser Ala
                170                 175

<210> 309
<211> 1321
<212> DNA
<213> Homosapiens

<400> 309
 gtcgacccac gcgtccgaag ctgctggagc cacgattcag tcccctggac 50

 tgtagataaa gaccctttct tgccaggtgc tgagacaacc acactatgag 100

 aggcactcca ggagacgctg atggtggagg aagggccgtc tatcaatcaa 150

 tcactgttgc tgttatcaca tgcaagtatc cagaggctct tgagcaaggc 200

 agagggatc ccatttattt gggaatccag aatccagaaa tgtgtttgta 250

 ttgtgagaag gttggagaac agcccacatt gcagctaaaa gagcagaaga 300

 tcatggatct gtatggccaa cccgagcccg tgaaaccctt ccttttctac 350

 cgtgccaaga ctggtaggac ctccaccctt gagtctgtgg ccttcccgga 400

 ctggttcatt gcctcctcca agagagacca gcccatcatt ctgacttcag 450

 aacttgggaa gtcatacaac actgcctttg aattaaatat aaatgactga 500

```
actcagccta gaggtggcag cttggtcttt gtcttaaagt ttctggttcc 550

caatgtgttt tcgtctacat tttcttagtg tcattttcac gctggtgctg 600

agacaggagc aaggctgctg ttatcatctc attttataat gaagaagaag 650

caattacttc atagcaactg aagaacagga tgtggcctca gaagcaggag 700

agctgggtgg tataaggctg tcctctcaag ctggtgctgt gtaggccaca 750

aggcatctgc atgagtgact ttaagactca aagaccaaac actgagcttt 800

cttctagggg tgggtatgaa gatgcttcag agctcatgcg cgttacccac 850

gatggcatga ctagcacaga gctgatctct gtttctgttt tgctttattc 900

cctcttggga tgatatcatc cagtctttat atgttgccaa tatacctcat 950

tgtgtgtaat agaaccttct tagcattaag accttgtaaa caaaaataat 1000

tcttggggtg ggtatgaaga tgcttcagag ctcatgcgcg ttacccacga 1050

tggcatgact agcacagagc tgatctctgt ttctgttttg ctttattccc 1100

tcttgggatg atatcatcca gtctttatat gttgccaata tacctcattg 1150

tgtgtaatag aaccttctta gcattaagac cttgtaaaca aaataattc 1200

ttgtgttaag ttaaatcatt tttgtcctaa ttgtaatgtg taatcttaaa 1250

gttaaataaa ctttgtgtat ttatataata ataaagctaa aactgatata 1300

aaataaagaa agagtaaact g 1321
```

```
<210> 310
<211> 134
<212> PRT
<213> Homosapiens

<400> 310
Met Arg Gly Thr Pro Gly Asp Ala Asp Gly Gly Arg Ala Val
  1               5                  10                  15

Tyr Gln Ser Ile Thr Val Ala Val Ile Thr Cys Lys Tyr Pro Glu
                   20                  25                  30

Ala Leu Glu Gln Gly Arg Gly Asp Pro Ile Tyr Leu Gly Ile Gln
                   35                  40                  45

Asn Pro Glu Met Cys Leu Tyr Cys Glu Lys Val Gly Glu Gln Pro
                   50                  55                  60

Thr Leu Gln Leu Lys Glu Gln Lys Ile Met Asp Leu Tyr Gly Gln
                   65                  70                  75

Pro Glu Pro Val Lys Pro Phe Leu Phe Tyr Arg Ala Lys Thr Gly
                   80                  85                  90

Arg Thr Ser Thr Leu Glu Ser Val Ala Phe Pro Asp Trp Phe Ile
                   95                  100                 105

Ala Ser Ser Lys Arg Asp Gln Pro Ile Ile Leu Thr Ser Glu Leu
                   110                 115                 120
```

366

Gly Lys Ser Tyr Asn Thr Ala Phe Glu Leu Asn Ile Asn Asp
            125                  130

<210> 311
<211> 999
<212> DNA
<213> Homosapiens

<400> 311
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gcgaggctgc accagcgcct ggcaccatga ggacgcctgg gcctctgccc 50

gtgctgctgc tgctcctggc gggagccccc gccgcgcggc ccactccccc 100

gacctgctac tcccgcatgc gggccctgag ccaggagatc acccgcgact 150

tcaacctcct gcaggtctcg agccctcgg agccatgtgt gagatacctg 200

cccaggctgt acctggacat acacaattac tgtgtgctgg acaagctgcg 250

ggactttgtg gcctcgcccc cgtgttggaa agtggcccag gtagattcct 300

tgaaggacaa agcacggaag ctgtacacca tcatgaactc gttctgcagg 350

agagatttgg tattcctgtt ggatgactgc aatgccttgg aatacccaat 400

cccagtgact acggtcctgc cagatcgtca gcgctaaggg aactgagacc 450

agagaaagaa cccaagagaa ctaaagttat gtcagctacc cagacttaat 500

gggccagagc catgaccctc acaggtcttg tgttagttgt atctgaaact 550

gttatgtatc tctctacctt ctggaaaaca gggctggtat tcctacccag 600

gaacctcctt tgagcataga gttagcaacc atgcttctca ttcccttgac 650

tcatgtcttg ccaggatggt tagatacaca gcatgttgat ttggtcacta 700

aaaagaagaa aaggactaac aagcttcact tttatgaaca actattttga 750

gaacatgcac aatagtatgt ttttattact ggtttaatgg agtaatggta 800

cttttattct ttcttgatag aaacctgctt acatttaacc aagcttctat 850

tatgcctttt tctaacacag actttcttca ctgtctttca tttaaaaaga 900

aattaatgct cttaagatat atattttacg tagtgctgac aggacccact 950

ctttcattga aaggtgatga aaatcaaata aagaatctct tcacatgga 999
```

<210> 312
<211> 136
<212> PRT
<213> Homosapiens

<400> 312
Met Arg Thr Pro Gly Pro Leu Pro Val Leu Leu Leu Leu Ala
  1           5             10             15

Gly Ala Pro Ala Ala Arg Pro Thr Pro Pro Thr Cys Tyr Ser Arg
          20             25             30

Met Arg Ala Leu Ser Gln Glu Ile Thr Arg Asp Phe Asn Leu Leu
          35             40             45

```
Gln Val Ser Glu Pro Ser Glu Pro Cys Val Arg Tyr Leu Pro Arg
                50              55              60

Leu Tyr Leu Asp Ile His Asn Tyr Cys Val Leu Asp Lys Leu Arg
                65              70              75

Asp Phe Val Ala Ser Pro Pro Cys Trp Lys Val Ala Gln Val Asp
                80              85              90

Ser Leu Lys Asp Lys Ala Arg Lys Leu Tyr Thr Ile Met Asn Ser
                95              100             105

Phe Cys Arg Arg Asp Leu Val Phe Leu Leu Asp Asp Cys Asn Ala
                110             115             120

Leu Glu Tyr Pro Ile Pro Val Thr Thr Val Leu Pro Asp Arg Gln
                125             130             135

Arg
```

```
<210> 313
<211> 1162
<212> DNA
<213> Homosapiens

<400> 313
 gagcgacgct gtctctagtc gctgatccca aatgcaccgg ctcatctttg 50

 tctacactct aatctgcgca aacttttgca gctgtcggga cacttctgca 100

 accccgcaga gcgcatccat caaagctttg cgcaacgcca acctcaggcg 150

 agatgacttg taccgaagag atgagaccat ccaggtgaaa ggaaacggct 200

 acgtgcagag tcctagattc ccgaacagct accccaggaa cctgctcctg 250

 acatggcggc ttcactctca ggagaataca cggatacagc tagtgtttga 300

 caatcagttt ggattagagg aagcagaaaa tgatatctgt aggtatgatt 350

 ttgtggaagt tgaagatata tccgaaacca gtaccattat tagaggacga 400

 tggtgtggac acaaggaagt tcctccaagg ataaaatcaa gaacgaacca 450

 aattaaaatc acattcaagt ccgatgacta ctttgtggct aaacctggat 500

 tcaagattta ttattctttg ctggaagatt ccaacccgc agcagcttca 550

 gagaccaact gggaatctgt cacaagctct atttcagggg tatcctataa 600

 ctctccatca gtaacggatc ccactctgat tgcggatgct ctggacaaaa 650

 aaattgcaga atttgataca gtggaagatc tgctcaagta cttcaatcca 700

 gagtcatggc aagaagatct tgagaatatg tatctggaca ccctcggta 750

 tcgaggcagg tcataccatg accggaagtc aaaagttgac ctggataggc 800

 tcaatgatga tgccaagcgt tacagttgca ctcccaggaa ttactcggtc 850

 aatataagag aagagctgaa gttggccaat gtggtcttct ttccacgttg 900
```

368

cctcctcgtg cagcgctgtg gaggaaattg tggctgtgga actgtcaact 950

ggaggtcctg cacatgcaat tcagggaaaa ccgtgaaaaa gtatcatgag 1000

gtattacagt ttgagcctgg ccacatcaag aggaggggta gagctaagac 1050

catggctcta gttgacatcc agttggatca ccatgaacga tgcgattgta 1100

tctgcagctc aagaccacct cgataagaga atgtgcacat ccttacatta 1150

agcctgagag aa 1162

<210> 314
<211> 364
<212> PRT
<213> Homosapiens

<400> 314

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Met His Arg Leu Ile Phe Val Tyr Thr Leu Ile Cys Ala Asn Phe
  1               5                  10                  15

Cys Ser Cys Arg Asp Thr Ser Ala Thr Pro Gln Ser Ala Ser Ile
               20                  25                  30

Lys Ala Leu Arg Asn Ala Asn Leu Arg Arg Asp Asp Leu Tyr Arg
               35                  40                  45

Arg Asp Glu Thr Ile Gln Val Lys Gly Asn Gly Tyr Val Gln Ser
               50                  55                  60

Pro Arg Phe Pro Asn Ser Tyr Pro Arg Asn Leu Leu Leu Thr Trp
               65                  70                  75

Arg Leu His Ser Gln Glu Asn Thr Arg Ile Gln Leu Val Phe Asp
               80                  85                  90

Asn Gln Phe Gly Leu Glu Glu Ala Glu Asn Asp Ile Cys Arg Tyr
               95                 100                 105

Asp Phe Val Glu Val Glu Asp Ile Ser Glu Thr Ser Thr Ile Ile
              110                 115                 120

Arg Gly Arg Trp Cys Gly His Lys Glu Val Pro Pro Arg Ile Lys
              125                 130                 135

Ser Arg Thr Asn Gln Ile Lys Ile Thr Phe Lys Ser Asp Asp Tyr
              140                 145                 150

Phe Val Ala Lys Pro Gly Phe Lys Ile Tyr Tyr Ser Leu Leu Glu
              155                 160                 165

Asp Phe Gln Pro Ala Ala Ala Ser Glu Thr Asn Trp Glu Ser Val
              170                 175                 180

Thr Ser Ser Ile Ser Gly Val Ser Tyr Asn Ser Pro Ser Val Thr
              185                 190                 195

Asp Pro Thr Leu Ile Ala Asp Ala Leu Asp Lys Lys Ile Ala Glu
              200                 205                 210

Phe Asp Thr Val Glu Asp Leu Leu Lys Tyr Phe Asn Pro Glu Ser
              215                 220                 225
```

369

```
Trp Gln Glu Asp Leu Glu Asn Met Tyr Leu Asp Thr Pro Arg Tyr
            230                 235                 240

Arg Gly Arg Ser Tyr His Asp Arg Lys Ser Lys Val Asp Leu Asp
            245                 250                 255

Arg Leu Asn Asp Asp Ala Lys Arg Tyr Ser Cys Thr Pro Arg Asn
            260                 265                 270

Tyr Ser Val Asn Ile Arg Glu Glu Leu Lys Leu Ala Asn Val Val
            275                 280                 285

Phe Phe Pro Arg Cys Leu Leu Val Gln Arg Cys Gly Gly Asn Cys
            290                 295                 300

Gly Cys Gly Thr Val Asn Trp Arg Ser Cys Thr Cys Asn Ser Gly
            305                 310                 315

Lys Thr Val Lys Lys Tyr His Glu Val Leu Gln Phe Glu Pro Gly
            320                 325                 330

His Ile Lys Arg Arg Gly Arg Ala Lys Thr Met Ala Leu Val Asp
            335                 340                 345

Ile Gln Leu Asp His His Glu Arg Cys Asp Cys Ile Cys Ser Ser
            350                 355                 360

Arg Pro Pro Arg
```

<210> 315
<211> 2598
<212> DNA
<213> Homosapiens

<400> 315

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ccctgtggag ctcaagatgg tcctgagtgg ggcgctgtgc ttccgaatga 100

aggactcggc attgaaggtg ctttatctgc ataataacca gcttctagct 150

ggagggctgc atgcagggaa ggtcattaaa ggtgaagaga tcagcgtggt 200

ccccaatcgg tggctggatg ccagcctgtc ccccgtcatc ctgggtgtcc 250

agggtggaag ccagtgcctg tcatgtgggg tggggcagga gccgactcta 300

acactagagc cagtgaacat catggagctc tatcttggtg ccaaggaatc 350

caagagcttc accttctacc ggcgggacat ggggctcacc tccagcttcg 400

agtcggctgc ctacccgggc tggttcctgt gcacggtgcc tgaagccgat 450

cagcctgtca gactcaccca gcttcccgag aatggtggct ggaatgcccc 500

catcacagac ttctacttcc agcagtgtga ctagggcaac gtgcccccca 550

gaactccctg ggcagagcca gctcgggtga ggggtgagtg gaggagaccc 600

atggcggaca atcactctct ctgctctcag gacccccacg tctgacttag 650

tgggcacctg accactttgt cttctggttc ccagtttgga taaattctga 700
```

```
gatttggagc tcagtccacg gtcctccccc actggatggt gctactgctg 750

tggaaccttg taaaaaccat gtggggtaaa ctgggaataa catgaaaaga 800

tttctgtggg ggtggggtgg gggagtggtg ggaatcattc ctgcttaatg 850

gtaactgaca agtgttaccc tgagccccgc aggccaaccc atccccagtt 900

gagccttata gggtcagtag ctctccacat gaagtcctgt cactcaccac 950

tgtgcaggag agggaggtgg tcatagagtc agggatctat ggcccttggc 1000

ccagccccac ccccttccct ttaatcctgc cactgtcata tgctaccttt 1050

cctatctctt ccctcatcat cttgttgtgg gcatgaggag gtggtgatgt 1100

cagaagaaat ggctcgagct cagaagataa aagataagta gggtatgctg 1150

atcctctttt aaaaacccaa gatacaatca aaatcccaga tgctggtctc 1200

tattcccatg aaaaagtgct catgacatat tgagaagacc tacttacaaa 1250

gtggcatata ttgcaattta ttttaattaa aagataccta tttatatatt 1300

tctttataga aaaaagtctg gaagagttta cttcaattgt agcaatgtca 1350

gggtggtggc agtataggtg atttttcttt taattctgtt aatttatctg 1400

tatttcctaa tttttctaca atgaagatga attccttgta taaaaataag 1450

aaaagaaatt aatcttgagg taagcagagc agacatcatc tctgattgtc 1500

ctcagcctcc acttccccag agtaaattca aattgaatcg agctctgctg 1550

ctctggttgg ttgtagtagt gatcaggaaa cagatctcag caaagccact 1600

gaggaggagg ctgtgctgag tttgtgtggc tggaatctct gggtaaggaa 1650

cttaaagaac aaaaatcatc tggtaattct ttcctagaag gatcacagcc 1700

cctgggattc caaggcattg gatccagtct ctaagaaggc tgctgtactg 1750

gttgaattgt gtccccctca aattcacatc cttcttggaa tctcagtctg 1800

tgagtttatt tggagataag gtctctgcag atgtagttag ttaagacaag 1850

gtcatgctgg atgaaggtag acctaaattc aatatgactg gtttccttgt 1900

atgaaaagga gaggacacag agacagagga gacgcgggga agactatgta 1950

aagatgaagg cagagatcgg agttttgcag ccacaagcta agaaacacca 2000

aggattgtgg caaccatcag aagcttggaa gaggcaaaga agaattcttc 2050

cctagaggct ttagagggat aacggctctg ctgaaacctt aatctcagac 2100

ttccagcctc ctgaacgaag aaagaataaa tttcggctgt tttaagccac 2150

caaggataat tggttacagc agctctagga aactaataca gctgctaaaa 2200

tgatccctgt ctcctcgtgt ttacattctg tgtgtgtccc ctcccacaat 2250

gtaccaaagt tgtctttgtg accaatagaa tatggcagaa gtgatggcat 2300
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371

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gccacttcca agattaggtt ataaaagaca ctgcagcttc tacttgagcc 2350

ctctctctct gccacccacc gcccccaatc tatcttggct cactcgctct 2400

gggggaagct agctgccatg ctatgagcag gcctataaag agacttacgt 2450

ggtaaaaaat gaagtctcct gcccacagcc acattagtga acctagaagc 2500

agagactctg tgagataatc gatgtttgtt gttttaagtt gctcagtttt 2550

ggtctaactt gttatgcagc aatagataaa taatatgcag agaaagag 2598
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<210> 316
<211> 155
<212> PRT
<213> Homosapiens

<400> 316

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Met | Val | Leu | Ser | Gly | Ala | Leu | Cys | Phe | Arg | Met | Lys | Asp | Ser | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Lys | Val | Leu | Tyr | Leu | His | Asn | Asn | Gln | Leu | Leu | Ala | Gly | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | His | Ala | Gly | Lys | Val | Ile | Lys | Gly | Glu | Glu | Ile | Ser | Val | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Asn | Arg | Trp | Leu | Asp | Ala | Ser | Leu | Ser | Pro | Val | Ile | Leu | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Gln | Gly | Gly | Ser | Gln | Cys | Leu | Ser | Cys | Gly | Val | Gly | Gln | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Thr | Leu | Thr | Leu | Glu | Pro | Val | Asn | Ile | Met | Glu | Leu | Tyr | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Ala | Lys | Glu | Ser | Lys | Ser | Phe | Thr | Phe | Tyr | Arg | Arg | Asp | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Leu | Thr | Ser | Ser | Phe | Glu | Ser | Ala | Ala | Tyr | Pro | Gly | Trp | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Cys | Thr | Val | Pro | Glu | Ala | Asp | Gln | Pro | Val | Arg | Leu | Thr | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Pro | Glu | Asn | Gly | Gly | Trp | Asn | Ala | Pro | Ile | Thr | Asp | Phe | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Gln | Gln | Cys | Asp | | | | | | | | | | |
| | | | | 155 | | | | | | | | | | |

<210> 317
<211> 663
<212> DNA
<213> Homosapiens

<400> 317

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atggaacttg gacttggagg cctctccacg ctgtcccact gccctggcc 50

taggcggcag cctgccctgt ggcccaccct ggccgctctg gctctgctga 100

gcagcgtcgc agaggcctcc ctgggctccg cgccccgcag ccctgccccc 150
```

```
cgcgaaggcc ccccgcctgt cctggcgtcc cccgccggcc acctgccggg 200

gggacgcacg gcccgctggt gcagtggaag agcccggcgg ccgccgccgc 250

agccttctcg gcccgcgccc ccgccgcctg caccccatc tgctcttccc 300

cgcggggggcc gcgcggcgcg ggctggggggc ccgggcagcc gcgctcgggc 350

agcgggggcg cggggctgcc gcctgcgctc gcagctggtg ccggtgcgcg 400

cgctcggcct gggccaccgc tccgacgagc tggtgcgttt ccgcttctgc 450

agcggctcct gccgccgcgc gcgctctcca cacgacctca gcctggccag 500

cctactgggc gccgggggccc tgcgaccgcc cccgggctcc cggcccgtca 550

gccagccctg ctgccgaccc acgcgctacg aagcggtctc cttcatggac 600

gtcaacagca cctggagaac cgtggaccgc ctctccgcca ccgcctgcgg 650

ctgcctgggc tga 663
```

```
<210> 318
<211> 220
<212> PRT
<213> Homosapiens

<400> 318
Met Glu Leu Gly Leu Gly Gly Leu Ser Thr Leu Ser His Cys Pro
1               5                   10                  15

Trp Pro Arg Arg Gln Pro Ala Leu Trp Pro Thr Leu Ala Ala Leu
                20                  25                  30

Ala Leu Leu Ser Ser Val Ala Glu Ala Ser Leu Gly Ser Ala Pro
                35                  40                  45

Arg Ser Pro Ala Pro Arg Glu Gly Pro Pro Val Leu Ala Ser
                50                  55                  60

Pro Ala Gly His Leu Pro Gly Gly Arg Thr Ala Arg Trp Cys Ser
                65                  70                  75

Gly Arg Ala Arg Arg Pro Pro Pro Gln Pro Ser Arg Pro Ala Pro
                80                  85                  90

Pro Pro Pro Ala Pro Pro Ser Ala Leu Pro Arg Gly Gly Arg Ala
                95                  100                 105

Ala Arg Ala Gly Gly Pro Gly Ser Arg Ala Arg Ala Ala Gly Ala
                110                 115                 120

Arg Gly Cys Arg Leu Arg Ser Gln Leu Val Pro Val Arg Ala Leu
                125                 130                 135

Gly Leu Gly His Arg Ser Asp Glu Leu Val Arg Phe Arg Phe Cys
                140                 145                 150

Ser Gly Ser Cys Arg Arg Ala Arg Ser Pro His Asp Leu Ser Leu
                155                 160                 165

Ala Ser Leu Leu Gly Ala Gly Ala Leu Arg Pro Pro Pro Gly Ser
                170                 175                 180
```

```
Arg Pro Val Ser Gln Pro Cys Cys Arg Pro Thr Arg Tyr Glu Ala
            185             190             195

Val Ser Phe Met Asp Val Asn Ser Thr Trp Arg Thr Val Asp Arg
            200             205             210

Leu Ser Ala Thr Ala Cys Gly Cys Leu Gly
            215             220
```

<210> 319
<211> 1049
<212> DNA
<213> Homosapiens

<400> 319

```
gttgctatgt tgcccaggct ggtcttgaag tgccttgacc tcctaaagtg 50

ttggaaccac agacgtgagc cactccaccc agcctaaaac ttcatcttct 100

ttggatgaga tgaacacttt taacaagaga acaggactct atataaatcg 150

ctgtgggctc accacctcta aggaggagca ctgactgaag acagaaaaat 200

tgatgaactg aagaagacat ggtccattat gccttacaaa cttacacagt 250

gctttgggaa ttccaaagta ctcagtggag agaggtgttt caggagccgt 300

agagccagat cgtcatcatg tctgcattgt ggctgctgct gggcctcctt 350

gccctgatgg acttgtctga aagcagcaac tggggatgct atggaaacat 400

ccaaagcctg acacccctg gagcatcttg tgggattgga agacgtcacg 450

gcctgaacta ctgtggagtt cgtgcttctg aaaggctggc tgaaatagac 500

atgccatacc tcctgaaata tcaacccatg atgcaaacca ttggccaaaa 550

gtactgcatg gatcctgccg tgatcgctgg tgtcttgtcc aggaagtctc 600

ccggtgacaa aattctggtc aacatgggcg ataggactag catggtgcag 650

gaccctggct ctcaagctcc cacatcctgg attagtgagt ctcaggtttc 700

ccagacaact gaagttctga ctactagaat caaagaaatc cagaggaggt 750

ttccaacctg gacccctgac cagtacctga gaggtggact ctgtgcctac 800

agtggggtg ctggctatgt ccgaagcagc caggacctga gctgtgactt 850

ctgcaatgat gtccttgcac gagccaagta cctcaagaga catggcttct 900

aacatctcag atgaaaccca agaccatgat cacatatgca gcctcaaatg 950

ttacacagat aaaactagcc aagggcacct gtaactggga atctgagttt 1000

gacctaaaag tcattaaaat aacatgaatc ccattaaaaa aaaaaaaaa 1049
```

<210> 320
<211> 194
<212> PRT
<213> Homosapiens

<400> 320

374

```
Met Ser Ala Leu Trp Leu Leu Leu Gly Leu Leu Ala Leu Met Asp
 1           5               10              15

Leu Ser Glu Ser Ser Asn Trp Gly Cys Tyr Gly Asn Ile Gln Ser
            20              25                      30

Leu Asp Thr Pro Gly Ala Ser Cys Gly Ile Gly Arg Arg His Gly
            35              40                      45

Leu Asn Tyr Cys Gly Val Arg Ala Ser Glu Arg Leu Ala Glu Ile
            50              55                      60

Asp Met Pro Tyr Leu Leu Lys Tyr Gln Pro Met Met Gln Thr Ile
            65              70                      75

Gly Gln Lys Tyr Cys Met Asp Pro Ala Val Ile Ala Gly Val Leu
            80              85                      90

Ser Arg Lys Ser Pro Gly Asp Lys Ile Leu Val Asn Met Gly Asp
            95              100                     105

Arg Thr Ser Met Val Gln Asp Pro Gly Ser Gln Ala Pro Thr Ser
            110             115                     120

Trp Ile Ser Glu Ser Gln Val Ser Gln Thr Thr Glu Val Leu Thr
            125             130                     135

Thr Arg Ile Lys Glu Ile Gln Arg Arg Phe Pro Thr Trp Thr Pro
            140             145                     150

Asp Gln Tyr Leu Arg Gly Gly Leu Cys Ala Tyr Ser Gly Gly Ala
            155             160                     165

Gly Tyr Val Arg Ser Ser Gln Asp Leu Ser Cys Asp Phe Cys Asn
            170             175                     180

Asp Val Leu Ala Arg Ala Lys Tyr Leu Lys Arg His Gly Phe
            185             190
```

<210> 321
<211> 1820
<212> DNA
<213> Homosapiens

<400> 321

```
 gccttataaa gtagcctctg catctgcctg cctcgggcag aggagggcta 50

 ccctggggct gagagttcac ctgtctcagg aaccacctga gcccacagat 100

 cctgtgggca gcggccaggg cagccatggc ttgggcaagt aggctgggcc 150

 tgctgctggc actgctgctg cccgtggtcg gtgcctccac gccaggcacc 200

 gtggtccgac tcaacaaggc agcattgagc tacgtgtctg aaattgggaa 250

 agcccctctc cagcgggccc tgcaggtcac tgtccctcat ttcctggact 300

 ggagtggaga ggcgcttcag cccaccagga tccggattct gaatgtccat 350

 gtgccccgcc tccacctgaa attcattgct ggtttcggag tgcgcctgct 400

 ggcagcagct aattttactt tcaaggtctt tcgcgcccca gagcccctgg 450
```

375

```
agctgacgct gcctgtggaa ctgctggctg acacccgcgt gacccagagc 500

tccatcagga cccctgtggt cagcatctct gcctgctctt tattctcggg 550

ccacgccaac gagtttgatg gcagtaacag cacctcccac gcgctgctgg 600

tcctggtgca gaagcacatt aaagctgtct tgagtaacaa gctgtgcctg 650

agcatctcca acctggtgca gggtgtcaat gtccacctgg caccttaat 700

tggcctcaac cccgtgggtc ctgagtccca gatccgctat ccatggtca 750

gtgtgcccac tgtcaccagt gactacattt ccctggaagt caatgctgtt 800

ctcttcctgc tgggcaaccc catcatcctg cccacggatg ccaccccttt 850

tgtgttgcca aggcatgtgg gtaccgaggg ctccatggcc accgtgggcc 900

tctcccagca gctgtttgac tctgcgctcc tgctgctgca gaaggccggt 950

gccctcaacc tggacatcac agggcagctg aggtcggatg acaacctgct 1000

gaacacctct gctctgggcc ggctcatccc ggaggtggcc cgccagtttc 1050

ccgagcccat gcctgtggtg ctcaaggtgc ggctgggtgc cacacctgtg 1100

gccatgctcc acacaaacaa cgccaccctg cggctgcagc ccttcgtgga 1150

ggtcctggcc acagcctcca actcggcttt ccagtccctc ttctccctgg 1200

atgtggtagt gaacttgaga ctccagctct ctgtgtccaa ggtgaagctt 1250

caggggacca cgtctgtgct gggggatgtc cagctcacgg tggcctcctc 1300

caacgtgggc ttcattgata cagatcaggt gcgcacactg atgggcaccg 1350

tttttgagaa gcccctgctg accatctca atgctctctt ggccatggga 1400

attgccctcc ctggtgtggt caacctccac tatgttgccc ctgagatctt 1450

tgtctatgag ggctacgtgg tgatatccag tggactcttc taccagagct 1500

gaggcaagac cactgggagg cctgagagtg gccagctcg ctgctcaggc 1550

gaatttctca tttcaagcca ctggggaaac tgaggcaaaa ccatacttag 1600

tcatcaccaa caagctggac tgcttagctg gctgtttta tcttccctga 1650

gtgcctgggt ctccctccct cacttctgcc ctttcccttc ctcctcctct 1700

tctcctccct cttccctcat ctccccctc cttcctctgc cccacccag 1750

gggggagcag actgctcctc caggctgtat agacctgccc tcttgcatta 1800

aacaacttct cttgagctgc 1820
```

```
<210> 322
<211> 458
<212> PRT
<213> Homosapiens

<400> 322
Met Ala Trp Ala Ser Arg Leu Gly Leu Leu Leu Ala Leu Leu Leu
```

376

```
1                    5                    10                   15
Pro Val Val Gly Ala Ser Thr Pro Gly Thr Val Val Arg Leu Asn
                20                   25                   30
Lys Ala Ala Leu Ser Tyr Val Ser Glu Ile Gly Lys Ala Pro Leu
                35                   40                   45
Gln Arg Ala Leu Gln Val Thr Val Pro His Phe Leu Asp Trp Ser
                50                   55                   60
Gly Glu Ala Leu Gln Pro Thr Arg Ile Arg Ile Leu Asn Val His
                65                   70                   75
Val Pro Arg Leu His Leu Lys Phe Ile Ala Gly Phe Gly Val Arg
                80                   85                   90
Leu Leu Ala Ala Ala Asn Phe Thr Phe Lys Val Phe Arg Ala Pro
                95                   100                  105
Glu Pro Leu Glu Leu Thr Leu Pro Val Glu Leu Leu Ala Asp Thr
                110                  115                  120
Arg Val Thr Gln Ser Ser Ile Arg Thr Pro Val Val Ser Ile Ser
                125                  130                  135
Ala Cys Ser Leu Phe Ser Gly His Ala Asn Glu Phe Asp Gly Ser
                140                  145                  150
Asn Ser Thr Ser His Ala Leu Leu Val Leu Val Gln Lys His Ile
                155                  160                  165
Lys Ala Val Leu Ser Asn Lys Leu Cys Leu Ser Ile Ser Asn Leu
                170                  175                  180
Val Gln Gly Val Asn Val His Leu Gly Thr Leu Ile Gly Leu Asn
                185                  190                  195
Pro Val Gly Pro Glu Ser Gln Ile Arg Tyr Ser Met Val Ser Val
                200                  205                  210
Pro Thr Val Thr Ser Asp Tyr Ile Ser Leu Glu Val Asn Ala Val
                215                  220                  225
Leu Phe Leu Leu Gly Asn Pro Ile Ile Leu Pro Thr Asp Ala Thr
                230                  235                  240
Pro Phe Val Leu Pro Arg His Val Gly Thr Glu Gly Ser Met Ala
                245                  250                  255
Thr Val Gly Leu Ser Gln Gln Leu Phe Asp Ser Ala Leu Leu Leu
                260                  265                  270
Leu Gln Lys Ala Gly Ala Leu Asn Leu Asp Ile Thr Gly Gln Leu
                275                  280                  285
Arg Ser Asp Asp Asn Leu Leu Asn Thr Ser Ala Leu Gly Arg Leu
                290                  295                  300
Ile Pro Glu Val Ala Arg Gln Phe Pro Glu Pro Met Pro Val Val
                305                  310                  315
Leu Lys Val Arg Leu Gly Ala Thr Pro Val Ala Met Leu His Thr
```

```
              320                   325                   330
Asn Asn Ala Thr Leu Arg Leu Gln Pro Phe Val Glu Val Leu Ala
                335                   340                   345
Thr Ala Ser Asn Ser Ala Phe Gln Ser Leu Phe Ser Leu Asp Val
                350                   355                   360
Val Val Asn Leu Arg Leu Gln Leu Ser Val Ser Lys Val Lys Leu
                365                   370                   375
Gln Gly Thr Thr Ser Val Leu Gly Asp Val Gln Leu Thr Val Ala
                380                   385                   390
Ser Ser Asn Val Gly Phe Ile Asp Thr Asp Gln Val Arg Thr Leu
                395                   400                   405
Met Gly Thr Val Phe Glu Lys Pro Leu Leu Asp His Leu Asn Ala
                410                   415                   420
Leu Leu Ala Met Gly Ile Ala Leu Pro Gly Val Val Asn Leu His
                425                   430                   435
Tyr Val Ala Pro Glu Ile Phe Val Tyr Glu Gly Tyr Val Val Ile
                440                   445                   450
Ser Ser Gly Leu Phe Tyr Gln Ser
                455
```

<210> 323
<211> 899
<212> DNA
<213> Homosapiens

<400> 323
```
 ttgaaaatct actctatcag ctgctgtggt tgccaccatt ctcaggaccc 50

 tcgccatgaa agcccttatg ctgctcaccc tgtctgttct gctctgctgg 100

 gtctcagctg acattcgctg tcactcctgc tacaaggtcc ctgtgctggg 150

 ctgtgtggac cggcagtcct gccgcctgga gccaggacag caatgcctga 200

 caacacatgc ataccttggt aagatgtggg ttttctccaa tctgcgctgt 250

 ggcacaccag aagagccctg tcaggaggcc ttcaaccaaa ccaaccgcaa 300

 gctgggtctg acatataaca ccacctgctg caacaaggac aactgcaaca 350

 gcgcaggacc ccggcccact ccagccctgg ccttgtctt ccttacctcc 400

 ttggctggcc ttggcctctg ctgctgcac tgagactcat tccattggct 450

 gcccctcctc ccacctgcct tggcctgagc ctctctccct gtgtctctgt 500

 atccctggc tttacagaat cgtctctccc tagctcccat ttctttaatt 550

 aaacactgtt ccgagtggtc tcctcatcca tccttccac ctcacaccct 600

 tcactctcct ttttctgggt cccttcccac ttccttccag gacctccatt 650

 ggctcctaga agggctcccc actttgcttc ctatactctg ctgtccccta 700
```

378

```
cttgaggagg gattgggatc tgggcctgaa atggggcttc tgtgttgtcc 750

ccagtgaagg ctcccacaag gacctgatga cctcactgta cagagctgac 800

tccccaaacc caggctccca tatgtacccc atcccccata ctcacctctt 850

tccattttga gtaataaatg tctgagtctg gaaaaaaaaa aaaaaaaaa 899
```

<210> 324
<211> 125
<212> PRT
<213> Homosapiens

<400> 324

```
Met Lys Ala Leu Met Leu Leu Thr Leu Ser Val Leu Leu Cys Trp
 1               5                  10                  15

Val Ser Ala Asp Ile Arg Cys His Ser Cys Tyr Lys Val Pro Val
                20                  25                  30

Leu Gly Cys Val Asp Arg Gln Ser Cys Arg Leu Glu Pro Gly Gln
                35                  40                  45

Gln Cys Leu Thr Thr His Ala Tyr Leu Gly Lys Met Trp Val Phe
                50                  55                  60

Ser Asn Leu Arg Cys Gly Thr Pro Glu Glu Pro Cys Gln Glu Ala
                65                  70                  75

Phe Asn Gln Thr Asn Arg Lys Leu Gly Leu Thr Tyr Asn Thr Thr
                80                  85                  90

Cys Cys Asn Lys Asp Asn Cys Asn Ser Ala Gly Pro Arg Pro Thr
                95                  100                 105

Pro Ala Leu Gly Leu Val Phe Leu Thr Ser Leu Ala Gly Leu Gly
                110                 115                 120

Leu Trp Leu Leu His
                125
```

<210> 325
<211> 1977
<212> DNA
<213> Homosapiens

<400> 325

```
acgggccgca gcggcagtga cgtagggttg gcgcacggat ccgttgcggc 50

tgcagctctg cagtcgggcc gttccttcgc cgccgccagg ggtagcggtg 100

tagctgcgca gcgtcgcgcg cgctaccgca cccaggttcg gcccgtaggc 150

gtctggcagc ccggcgccat cttcatcgag cgccatggcc gcagcctgcg 200

ggccgggagc ggccgggtac tgcttgctcc tcggcttgca tttgtttctg 250

ctgaccgcgg gccctgccct gggctggaac gaccctgaca gaatgttgct 300

gcgggatgta aaagctctta ccctccacta tgaccgctat accacctccc 350

gcaggctgga tcccatccca cagttgaaat gtgttggagg cacagctggt 400
```

379

```
tgtgattctt ataccccaaa agtcatacag tgtcagaaca aaggctggga 450

tgggtatgat gtacagtggg aatgtaagac ggacttagat attgcataca 500

aatttggaaa aactgtggtg agctgtgaag gctatgagtc ctctgaagac 550

cagtatgtac taagaggttc ttgtggcttg gagtataatt tagattatac 600

agaacttggc ctgcagaaac tgaaggagtc tggaaagcag cacggctttg 650

cctctttctc tgattattat tataagtggt cctcggcgga ttcctgtaac 700

atgagtggat tgattaccat cgtggtactc cttgggatcg cctttgtagt 750

ctataagctg ttcctgagtg acgggcagta ttctcctcca ccgtactctg 800

agtatcctcc attttcccac cgttaccaga gattcaccaa ctcagcagga 850

cctcctcccc caggctttaa gtctgagttc acaggaccac agaatactgg 900

ccatggtgca acttctggtt ttggcagtgc ttttacagga caacaaggat 950

atgaaaattc aggaccaggg ttctggacag gcttgggaac tggtggaata 1000

ctaggatatt tgtttggcag caatagagcg gcaacaccct tctcagactc 1050

gtggtactac ccgtcctatc ctccctccta ccctggcacg tggaataggg 1100

cttactcacc ccttcatgga ggctcgggca gctattcggt atgttcaaac 1150

tcagacacga aaaccagaac tgcatcagga tatggtggta ccaggagacg 1200

ataaagtaga aagttggagt caaacactgg atgcagaaat tttggatttt 1250

tcatcacttt ctctttagaa aaaaagtact acctgttaac aattgggaaa 1300

aggggatatt caaaagttct gtggtgttat gtccagtgta gcttttgta 1350

ttctattatt tgaggctaaa agttgatgtg tgacaaaata cttatgtgtt 1400

gtatgtcagt gtaacatgca gatgtatatt gcagtttttg aaagtgatca 1450

ttactgtgga atgctaaaaa tacattaatt tctaaaacct gtgatgccct 1500

aagaagcatt aagaatgaag gtgttgtact aatagaaact aagtacagaa 1550

aatttcagtt ttaggtggtt gtagctgatg agttattacc tcatagagac 1600

tataatattc tatttggtat tatattattt gatgtttgct gttcttcaaa 1650

catttaaatc aagctttgga ctaattatgc taatttgtga gttctgatca 1700

cttttgagct ctgaagcttt gaatcattca gtggtggaga tggccttctg 1750

gtaactgaat attaccttct gtaggaaaag gtggaaaata agcatctaga 1800

aggttgttgt gaatgactct gtgctggcaa aaatgcttga aacctctata 1850

tttctttcgt tcataagagg taaaggtcaa atttttcaac aaaagtcttt 1900

taataacaaa agcatgcagt tctctgtgaa atctcaaata ttgttgtaat 1950

agtctgtttc aatcttaaaa agaatca 1977
```

<!-- running header (stylized/illegible) -->

<210> 326
<211> 339
<212> PRT
<213> Homosapiens

<400> 326

```
Met Ala Ala Ala Cys Gly Pro Gly Ala Ala Gly Tyr Cys Leu Leu
 1               5                  10                  15

Leu Gly Leu His Leu Phe Leu Leu Thr Ala Gly Pro Ala Leu Gly
                20                  25                  30

Trp Asn Asp Pro Asp Arg Met Leu Leu Arg Asp Val Lys Ala Leu
                35                  40                  45

Thr Leu His Tyr Asp Arg Tyr Thr Thr Ser Arg Arg Leu Asp Pro
                50                  55                  60

Ile Pro Gln Leu Lys Cys Val Gly Gly Thr Ala Gly Cys Asp Ser
                65                  70                  75

Tyr Thr Pro Lys Val Ile Gln Cys Gln Asn Lys Gly Trp Asp Gly
                80                  85                  90

Tyr Asp Val Gln Trp Glu Cys Lys Thr Asp Leu Asp Ile Ala Tyr
                95                  100                 105

Lys Phe Gly Lys Thr Val Val Ser Cys Glu Gly Tyr Glu Ser Ser
                110                 115                 120

Glu Asp Gln Tyr Val Leu Arg Gly Ser Cys Gly Leu Glu Tyr Asn
                125                 130                 135

Leu Asp Tyr Thr Glu Leu Gly Leu Gln Lys Leu Lys Glu Ser Gly
                140                 145                 150

Lys Gln His Gly Phe Ala Ser Phe Ser Asp Tyr Tyr Tyr Lys Trp
                155                 160                 165

Ser Ser Ala Asp Ser Cys Asn Met Ser Gly Leu Ile Thr Ile Val
                170                 175                 180

Val Leu Leu Gly Ile Ala Phe Val Val Tyr Lys Leu Phe Leu Ser
                185                 190                 195

Asp Gly Gln Tyr Ser Pro Pro Pro Tyr Ser Glu Tyr Pro Pro Phe
                200                 205                 210

Ser His Arg Tyr Gln Arg Phe Thr Asn Ser Ala Gly Pro Pro Pro
                215                 220                 225

Pro Gly Phe Lys Ser Glu Phe Thr Gly Pro Gln Asn Thr Gly His
                230                 235                 240

Gly Ala Thr Ser Gly Phe Gly Ser Ala Phe Thr Gly Gln Gln Gly
                245                 250                 255

Tyr Glu Asn Ser Gly Pro Gly Phe Trp Thr Gly Leu Gly Thr Gly
                260                 265                 270

Gly Ile Leu Gly Tyr Leu Phe Gly Ser Asn Arg Ala Ala Thr Pro
                275                 280                 285
```

```
Phe Ser Asp Ser Trp Tyr Tyr Pro Ser Tyr Pro Pro Ser Tyr Pro
                290                 295                 300

Gly Thr Trp Asn Arg Ala Tyr Ser Pro Leu His Gly Gly Ser Gly
                305                 310                 315

Ser Tyr Ser Val Cys Ser Asn Ser Asp Thr Lys Thr Arg Thr Ala
                320                 325                 330

Ser Gly Tyr Gly Gly Thr Arg Arg Arg
                335
```

<210> 327
<211> 840
<212> DNA
<213> Homosapiens

<400> 327

```
ggcacgaggt ggaagggctt ttacaaacag attgctggcc ccacccccca 50

gaatttctca tcaggagtgg gcaagaccaa tcatttgcat ttctgacaag 100

ttcccaggag ctgcagctgc tggccctgga accacacttt gagaaccact 150

gctttagacc aaacaccaaa ggaagatgca gccaccctcc tttacatgtc 200

acaacgctca gggtccatga gtacctcagg ctgtccagct gagctccacc 250

tgcagcagcc gagattcccg actcgctcca ccattggggg ctaggagtga 300

agcgtgtcac catggtcagc tcatggccag ccaggaaagc ctctctgctg 350

tgcgtctgtg cagttcttgt tcttccctgg aggactcttg gatcgcctgt 400

gatcttggcc aggagaccag gtgcctgggt cccttcctgg aaggggacaa 450

gttacacacc ccagccccat tttcccacca acttctacat gccttgggag 500

aaccttctac atgttggctg ccccccttccc ctatttcagc agtgcccagt 550

cctgcttata aacctgaggc ctgctcccca taccttccct gtgcaagtgc 600

cagccgttat tccaggcagc ccaatgttgt tgaggccaga tggattcctg 650

gaagcagctg gcccatggat gtgagtcatc acagtattct agaaacagag 700

aagaggtctt aacctaatgc gcatagagaa attgttctca ttgtaaacat 750

acccctgtcc ttagctgatc taggtggaag cccagcttca tgtgctaggg 800

ggcatgataa tgataataaa ggaattgtat ctaggactaa 840
```

<210> 328
<211> 120
<212> PRT
<213> Homosapiens

<400> 328

```
Met Val Ser Ser Trp Pro Ala Arg Lys Ala Ser Leu Leu Cys Val
  1               5                  10                  15

Cys Ala Val Leu Val Leu Pro Trp Arg Thr Leu Gly Ser Pro Val
                20                  25                  30
```

382

```
Ile Leu Ala Arg Arg Pro Gly Ala Trp Val Pro Ser Trp Lys Gly
              35              40              45

Thr Ser Tyr Thr Pro Gln Pro His Phe Pro Thr Asn Phe Tyr Met
              50              55              60

Pro Trp Glu Asn Leu Leu His Val Gly Cys Pro Leu Pro Leu Phe
              65              70              75

Gln Gln Cys Pro Val Leu Leu Ile Asn Leu Arg Pro Ala Pro His
              80              85              90

Thr Phe Pro Val Gln Val Pro Ala Val Ile Pro Gly Ser Pro Met
              95              100             105

Leu Leu Arg Pro Asp Gly Phe Leu Glu Ala Ala Gly Pro Trp Met
              110             115             120
```

<210> 329
<211> 771
<212> DNA
<213> Homosapiens

<400> 329

```
caaagagtag tcagtccctt cttggctctg ctgacactcg agcccacatt 50

ccatcacctg ctcccaatca tgcaggtctc cactgctgcc cttgccgtcc 100

tcctctgcac catggctctc tgcaaccagg tcctctctgc accacttgct 150

gctgacacgc cgaccgcctg ctgcttcagc tacacctccc gacagattcc 200

acagaatttc atagctgact actttgagac gagcagccag tgctccaagc 250

ccagtgtcat cttcctaacc aagagaggcc ggcaggtctg tgctgacccc 300

agtgaggagt gggtccagaa atacgtcagt gacctggagc tgagtgcctg 350

aggggtccag aagcttcgag gcccagcgac ctcagtgggc ccagtgggga 400

ggagcaggag cctgagcctt gggaacatgc gtgtgacctc tacagctacc 450

tcttctatgg actggttatt gccaaacagc cacactgtgg gactcttctt 500

aacttaaatt ttaatttatt tatactattt agtttttata atttattttt 550

gatttcacag tgtgtttgtg attgtttgct ctgagagttc cccctgtccc 600

ctccccttc cctcacagtg tgtctggtga caaccgagtg gctgtcatcg 650

gcctgtgtag gcagtcatgg caccaaagcc accagactga caaatgtgta 700

tcaaatgctt ttgttcaggg ctgtgatcgg cctggggaaa taataaagat 750

gttcttttaa acggtaaaaa a 771
```

<210> 330
<211> 93
<212> PRT
<213> Homosapiens

<400> 330

```
Met Gln Val Ser Thr Ala Ala Leu Ala Val Leu Leu Cys Thr Met
```

```
 1                5                      10                         15
Ala Leu Cys Asn Gln Val Leu Ser Ala Pro Leu Ala Ala Asp Thr
                20                      25                         30
Pro Thr Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile Pro Gln
                35                      40                         45
Asn Phe Ile Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser Lys
                50                      55                         60
Pro Ser Val Ile Phe Leu Thr Lys Arg Gly Arg Gln Val Cys Ala
                65                      70                         75
Asp Pro Ser Glu Glu Trp Val Gln Lys Tyr Val Ser Asp Leu Glu
                80                      85                         90

Leu Ser Ala
```

<210> 331
<211> 1557
<212> DNA
<213> Homosapiens

<400> 331
```
 ggcacgaggt gagactttaa atgaaatgtc tcacaagcta ggtgatccag  50
 gttttgtggt ctttgcaacc cttgtggtca ttgtggcctt gatattaatc 100
 ttcgtggtgg gtcctcgcca tggacagaca aacattcttg tgtacataac 150
 aatctgctct gtaatcggcg cgttttcagt ctcctgtgtg aagggcctgg 200
 gcattgctat caaggagctg tttgcaggga gcctgtgct gcggcatccc 250
 ctggcttgga ttctgctgct gagcctcatc gtctgtgtga gcacacagat 300
 taattaccta aatagggccc tggatatatt caacacttcc attgtgactc 350
 caatatatta tgtattcttt acaacatcag ttttaacttg ttcagctatt 400
 ctttttaagg agtggcaaga tatgcctgtt gacgatgtca ttggtacttt 450
 gagtggcttc tttacaatca ttgtggggat attcttgttg catgccttta 500
 aagacgtcag ctttagtcta gcaagtctgc ctgtgtcttt tcgaaaagac 550
 gagaaagcaa tgaatggcaa tctctctaat atgtatgaag ttcttaataa 600
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 tctcccgaag aaatggaaat ctgacagctt tttaagaaag gtgtaattaa 700
 aggttaatct gtgattgtta tgaagtgaat ttgaatatca tcagaatgtg 750
 tctgaaaaaa cattgtcctc aaataatgtt ctttaaaggc aatctttta 800
 aagatttcac taatttggac caagaaatta cttttcttgt atttaaacaa 850
 acaatggtag ctcactaaaa tgacctcagc acatgacgat ttctattaac 900
 attttattgt tgtagaagta ttttacattt tcatcccttc tccaaaagcc 950
```

```
gaatgcacta atgacagttt taagtctatg aaaatgcttt attttttcat 1000

tggtgatgaa agtctgaaat gtgcatttgt catccccact ccatcaatcc 1050

ctgaccatgt aaggcttttt tattttaaaa aaacagagtt atcccaatac 1100

attatcctgt gatttacctt acctacaaaa gtggctcctg tttgtttgat 1150

gatgattggt tttattttg aaatatttat taagggaaaa ctaagttact 1200

gaatgaagga acctctttct tacaaaacaa aaaaaagggc agaaatcacc 1250

ccaaggaacg atttctcagg ttgagatgat caccgtgaat ccggcttcct 1300

ctgagcattc gatggcctta gcacctcatc aagccagcac atcctgcctg 1350

ctgttgcagc ctggctgggt ttattcttca gttaccctaa tcccatgatg 1400

cctggaacct tgattaccgt tttacatcag ctcttgtact tttcagtata 1450

ttttcataat gagttatatt gtcatttaga ctttgaacag ctctgggaaa 1500

tagaagacta gggttgtttc ttaaatttag ctcatgttat aataaaaagt 1550

tgaaatg 1557
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<210> 332
<211> 219
<212> PRT
<213> Homosapiens

<400> 332

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Met Ser His Lys Leu Gly Asp Pro Gly Phe Val Val Phe Ala Thr
  1               5                  10                  15

Leu Val Val Ile Val Ala Leu Ile Leu Ile Phe Val Val Gly Pro
                 20                  25                  30

Arg His Gly Gln Thr Asn Ile Leu Val Tyr Ile Thr Ile Cys Ser
                 35                  40                  45

Val Ile Gly Ala Phe Ser Val Ser Cys Val Lys Gly Leu Gly Ile
                 50                  55                  60

Ala Ile Lys Glu Leu Phe Ala Gly Lys Pro Val Leu Arg His Pro
                 65                  70                  75

Leu Ala Trp Ile Leu Leu Leu Ser Leu Ile Val Cys Val Ser Thr
                 80                  85                  90

Gln Ile Asn Tyr Leu Asn Arg Ala Leu Asp Ile Phe Asn Thr Ser
                 95                 100                 105

Ile Val Thr Pro Ile Tyr Tyr Val Phe Phe Thr Thr Ser Val Leu
                110                 115                 120

Thr Cys Ser Ala Ile Leu Phe Lys Glu Trp Gln Asp Met Pro Val
                125                 130                 135

Asp Asp Val Ile Gly Thr Leu Ser Gly Phe Phe Thr Ile Ile Val
                140                 145                 150

Gly Ile Phe Leu Leu His Ala Phe Lys Asp Val Ser Phe Ser Leu
```

385

```
              155                      160                      165
    Ala Ser Leu Pro Val Ser Phe Arg Lys Asp Glu Lys Ala Met Asn
                170                  175              180

    Gly Asn Leu Ser Asn Met Tyr Glu Val Leu Asn Asn Asn Glu Glu
                185                  190              195

    Ser Leu Thr Cys Gly Ile Glu Gln His Thr Gly Glu Asn Val Ser
                200                  205              210

    Arg Arg Asn Gly Asn Leu Thr Ala Phe
                215
```

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<210> 333
<211> 1081
<212> DNA
<213> Homosapiens

<400> 333
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 cggcagcgga agggggaggc tgggcggcgg cggcgttggc gcttctgacg 150

 gggggcgggg aaatgctgct gaacgtggcg ctggtggctc tggtgctgct 200

 gggggcctac cggctgtggg tgcgctgggg gcggcggggt ctgggggccg 250

 gggccggggc gggcgaggag agccccgcca cctctctgcc tcgcatgaag 300

 aagcgggact tcagcttgga gcagctgcgc cagtacgacg gctcccgcaa 350

 cccgcgcatc ctgctcgcgg tcaatgggaa agtcttcgac gtgaccaaag 400

 gcagcaagtt ctacggcccg gcgggtccat atggaatatt tgctggtagg 450

 gatgcctcca gaggactggc cacattttgc ctagataaag atgcacttag 500

 agatgaatat gatgatctct cagatttgaa tgcagtacaa atggagagtg 550

 ttcgagaatg ggaaatgcag tttaaagaaa aatatgatta tgtaggcaga 600

 ctcctaaaac caggagaaga accatcagaa tatacagatg aagaagatac 650

 caaggatcac aataaacagg attgaacttt gtaaacaacc aaagtcaggg 700

 gccttcagaa ctgcaattct tactcccttt cacagactgt ccggagtctt 750

 tgggtttgat tcacctgctg cgaaaaacat tcaacaaatt gtgtacaaga 800

 taaattaatc tcactatgaa gatttgaata actagacatt atttatgctg 850

 ccaaactcat ttgttgcagt tgtttgtaat gtctagtggg gcttcatcat 900

 cctgaaaaga aggagacagg gattttttta aagagcaaga aagtcacaat 950

 attacttctt tccttccttt tttccttctt tcctttcttc tttctctttc 1000

 tttctttta aaatatattg aagacaacca gatatgtatt tgctactcaa 1050

 gtgtacagat ctcctcaaga aacatcaagg g 1081
```

<210> 334
<211> 223
<212> PRT
<213> Homosapiens

<400> 334

```
Met Ala Ala Gly Asp Gly Asp Val Lys Leu Gly Thr Leu Gly Ser
 1               5                  10                  15

Gly Ser Glu Ser Ser Asn Asp Gly Gly Ser Glu Ser Pro Gly Asp
                20                  25                  30

Ala Gly Ala Ala Ala Glu Gly Gly Gly Trp Ala Ala Ala Ala Leu
                35                  40                  45

Ala Leu Leu Thr Gly Gly Gly Glu Met Leu Leu Asn Val Ala Leu
                50                  55                  60

Val Ala Leu Val Leu Leu Gly Ala Tyr Arg Leu Trp Val Arg Trp
                65                  70                  75

Gly Arg Arg Gly Leu Gly Ala Gly Ala Gly Ala Gly Glu Glu Ser
                80                  85                  90

Pro Ala Thr Ser Leu Pro Arg Met Lys Lys Arg Asp Phe Ser Leu
                95                  100                 105

Glu Gln Leu Arg Gln Tyr Asp Gly Ser Arg Asn Pro Arg Ile Leu
                110                 115                 120

Leu Ala Val Asn Gly Lys Val Phe Asp Val Thr Lys Gly Ser Lys
                125                 130                 135

Phe Tyr Gly Pro Ala Gly Pro Tyr Gly Ile Phe Ala Gly Arg Asp
                140                 145                 150

Ala Ser Arg Gly Leu Ala Thr Phe Cys Leu Asp Lys Asp Ala Leu
                155                 160                 165

Arg Asp Glu Tyr Asp Asp Leu Ser Asp Leu Asn Ala Val Gln Met
                170                 175                 180

Glu Ser Val Arg Glu Trp Glu Met Gln Phe Lys Glu Lys Tyr Asp
                185                 190                 195

Tyr Val Gly Arg Leu Leu Lys Pro Gly Glu Glu Pro Ser Glu Tyr
                200                 205                 210

Thr Asp Glu Glu Asp Thr Lys Asp His Asn Lys Gln Asp
                215                 220
```

<210> 335
<211> 2814
<212> DNA
<213> Homosapiens

<400> 335

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gacaggccgg ggttactgtg cgaccacga  gagcagcttt ggcgctatgg 50

aggagcccgg ggctacccct caaccgtatt tggggctgct cctggaggag 100

ctacgcaggg ttgtggcagc actgcctgaa ggtatgagac cagattctaa 150
```

```
tctttatggt tttccatggg aattggtgat atgtgcagct gttgttggat 200

tttttgctgt tctctttttt ttgtggagaa gttttagatc ggttaggagt 250

cggctttatg tgggacgaga gaaaaagctt gctctaatgc tttctggact 300

aattgaagaa aaaagtaaac tacttgaaaa atttagcctt gttcaaaaag 350

agtatgaagg ctatgaagta gagtcatctt taaaggatgc cagctttgag 400

aaggaggcaa cagaagcaca aagtttggag gcaacctgtg aaaagctgaa 450

caggtccaat tctgaacttg aggatgaaat actctgtcta gaaaaagagt 500

taaaagaaga gaaatccaaa cattctgaac aagatgaatt gatggcggat 550

atttcaaaaa ggatacagtc tctagaagat gagtcaaaat ccctcaaatc 600

acaagtagct gaagccaaaa tgaccttcca gatatttcaa atgaatgaag 650

aacgactgaa gatagcaata aaagatgctt tgaatgaaaa ttctcaactt 700

caggaaagcc agaaacagct tttgcaagaa gctgaagtat ggaaagaaca 750

agtgagtgaa cttaataaac agaaagtaac atttgaagac tccaaagtac 800

atgcagaaca agttctaaat gataaagaaa gtcacatcaa gactctgact 850

gaacgcttgt taaagatgaa agattgggct gctatgcttg agaagacat 900

aacggatgat gataacttgg aattagaaat gaacagtgaa tcggaaatg 950

gtgcttactt agataatcct ccaaaaggag ctttgaagaa actgattcat 1000

gctgctaagt taaatgcttc tttaaaaacc ttagaaggag aaagaaacca 1050

aatttatatt cagttgtctg aagttgataa aacaaaggaa gagcttacag 1100

agcatattaa aaatcttcag actcaacaag catctttgca gtcagaaaac 1150

acacattttg aaaatgagaa tcagaagctt caacagaaac ttaaagtaat 1200

gactgaatta tatcaagaaa atgaaatgaa actccacagg aaattaacag 1250

tagaggaaaa ttatcggtta gagaagaag agaaactttc taaagtagat 1300

gaaaagatca gccatgccac tgaagagctg gagacctata gaaagcgagc 1350

caaagatctt gaagaagaat tggagagaac tattcattct tatcaagggc 1400

agattatttc ccatgagaaa aaagcacatg ataattggtt ggcagctcgg 1450

aatgctgaaa gaaacctcaa tgatttaagg aaagaaaatg ctcacaacag 1500

acaaaaatta actgaaacag agcttaáatt tgaactttta gaaaaagatc 1550

cttatgcact cgatgttcca aatacagcat ttggcagagg ctcacgaggc 1600

ccagggaatc ctctggacca tcagattacc aatgaaagag gagaatcaag 1650

ctgtgatagg ttaaccgatc ctcatagggc tccctctgac actgggtctc 1700

tgtcacctcc atgggaccag gaccgtagga tgatgtttcc tccgccagga 1750
```

388

```
caatcatatc ctgattcagc ccttcctcca caaaggcaag acagattttg 1800

ttctaattct ggtagactgt ctggaccagc agaactcaga agttttaata 1850

tgccttcttt ggataaaatg gatgggtcaa tgccttcaga aatggaatcc 1900

agtagaaatg ataccaaaga tgatcttggt aatttaaatg tgcctgattc 1950

atctctccct gctgaaaatg aagccactgg ccctggcttt gttcctccac 2000

ctcttgctcc aatcagaggt ccattgtttc cagtggatgc aagaggccca 2050

ttcttgagaa gaggacctcc tttccccccca cctcctccag gagccatgtt 2100

tggagcttct cgagattatt ttccaccaag ggatttccca ggtccaccac 2150

ctgctccatt tgcaatgaga aatgtctatc caccgagggg ttttcctcct 2200

taccttcccc caagacctgg attttttcccc ccacccccac attctgaagg 2250

tagaagtgag ttcccctcag gtttgattcc accttcaaat gagcctgcta 2300

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caaaagtaat tttgactgat ctcattttca gtttaagtaa ctgctgttac 2400

ttaagtgatt acactttttgc tcaaattgaa gcttaatgga attataattc 2450

tcaggatagt attttgtaaa taaagatgat ttaaatatga atcttatgag 2500

taaattattt caattttatt ttagacggta taactatttc aatttgatta 2550

atccactatt atataaacaa tagtgggagt tttatatatg taatctttca 2600

ggtggggagg ctttaaattc tgaagtctgt gtctttatgc caagaactgt 2650

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ttatagttga tttaaagatt tgtttggcat tgataataat aaaatcagta 2750

gttttttctat aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2800

aaaaaaaaaa aaaa 2814
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<210> 336
<211> 776
<212> PRT
<213> Homosapiens

<400> 336
 Thr Gly Arg Gly Tyr Cys Gly Asp His Glu Ser Ser Phe Gly Ala
 1               5                  10                  15

 Met Glu Glu Pro Gly Ala Thr Pro Gln Pro Tyr Leu Gly Leu Leu
                 20                  25                  30

 Leu Glu Glu Leu Arg Arg Val Val Ala Ala Leu Pro Glu Gly Met
                 35                  40                  45

 Arg Pro Asp Ser Asn Leu Tyr Gly Phe Pro Trp Glu Leu Val Ile
                 50                  55                  60

 Cys Ala Ala Val Val Gly Phe Phe Ala Val Leu Phe Phe Leu Trp
```

Arg Ser Phe Arg Ser Val Arg Ser Arg Leu Tyr Val Gly Arg Glu
                80                      85                      90

Lys Lys Leu Ala Leu Met Leu Ser Gly Leu Ile Glu Glu Lys Ser
                95                      100                     105

Lys Leu Leu Glu Lys Phe Ser Leu Val Gln Lys Glu Tyr Glu Gly
                110                     115                     120

Tyr Glu Val Glu Ser Ser Leu Lys Asp Ala Ser Phe Glu Lys Glu
                125                     130                     135

Ala Thr Glu Ala Gln Ser Leu Glu Ala Thr Cys Glu Lys Leu Asn
                140                     145                     150

Arg Ser Asn Ser Glu Leu Glu Asp Glu Ile Leu Cys Leu Glu Lys
                155                     160                     165

Glu Leu Lys Glu Glu Lys Ser Lys His Ser Glu Gln Asp Glu Leu
                170                     175                     180

Met Ala Asp Ile Ser Lys Arg Ile Gln Ser Leu Glu Asp Glu Ser
                185                     190                     195

Lys Ser Leu Lys Ser Gln Val Ala Glu Ala Lys Met Thr Phe Gln
                200                     205                     210

Ile Phe Gln Met Asn Glu Glu Arg Leu Lys Ile Ala Ile Lys Asp
                215                     220                     225

Ala Leu Asn Glu Asn Ser Gln Leu Gln Glu Ser Gln Lys Gln Leu
                230                     235                     240

Leu Gln Glu Ala Glu Val Trp Lys Glu Gln Val Ser Glu Leu Asn
                245                     250                     255

Lys Gln Lys Val Thr Phe Glu Asp Ser Lys Val His Ala Glu Gln
                260                     265                     270

Val Leu Asn Asp Lys Glu Ser His Ile Lys Thr Leu Thr Glu Arg
                275                     280                     285

Leu Leu Lys Met Lys Asp Trp Ala Ala Met Leu Gly Glu Asp Ile
                290                     295                     300

Thr Asp Asp Asp Asn Leu Glu Leu Glu Met Asn Ser Glu Ser Glu
                305                     310                     315

Asn Gly Ala Tyr Leu Asp Asn Pro Pro Lys Gly Ala Leu Lys Lys
                320                     325                     330

Leu Ile His Ala Ala Lys Leu Asn Ala Ser Leu Lys Thr Leu Glu
                335                     340                     345

Gly Glu Arg Asn Gln Ile Tyr Ile Gln Leu Ser Glu Val Asp Lys
                350                     355                     360

Thr Lys Glu Glu Leu Thr Glu His Ile Lys Asn Leu Gln Thr Gln
                365                     370                     375

Gln Ala Ser Leu Gln Ser Glu Asn Thr His Phe Glu Asn Glu Asn

```
                    380                      385                      390
Gln Lys Leu Gln Gln Lys Leu Lys Val Met Thr Glu Leu Tyr Gln
                    395                      400                      405
Glu Asn Glu Met Lys Leu His Arg Lys Leu Thr Val Glu Glu Asn
                    410                      415                      420
Tyr Arg Leu Glu Lys Glu Glu Lys Leu Ser Lys Val Asp Glu Lys
                    425                      430                      435
Ile Ser His Ala Thr Glu Glu Leu Glu Thr Tyr Arg Lys Arg Ala
                    440                      445                      450
Lys Asp Leu Glu Glu Glu Leu Glu Arg Thr Ile His Ser Tyr Gln
                    455                      460                      465
Gly Gln Ile Ile Ser His Glu Lys Lys Ala His Asp Asn Trp Leu
                    470                      475                      480
Ala Ala Arg Asn Ala Glu Arg Asn Leu Asn Asp Leu Arg Lys Glu
                    485                      490                      495
Asn Ala His Asn Arg Gln Lys Leu Thr Glu Thr Glu Leu Lys Phe
                    500                      505                      510
Glu Leu Leu Glu Lys Asp Pro Tyr Ala Leu Asp Val Pro Asn Thr
                    515                      520                      525
Ala Phe Gly Arg Gly Ser Arg Gly Pro Gly Asn Pro Leu Asp His
                    530                      535                      540
Gln Ile Thr Asn Glu Arg Gly Glu Ser Ser Cys Asp Arg Leu Thr
                    545                      550                      555
Asp Pro His Arg Ala Pro Ser Asp Thr Gly Ser Leu Ser Pro Pro
                    560                      565                      570
Trp Asp Gln Asp Arg Arg Met Met Phe Pro Pro Pro Gly Gln Ser
                    575                      580                      585
Tyr Pro Asp Ser Ala Leu Pro Pro Gln Arg Gln Asp Arg Phe Cys
                    590                      595                      600
Ser Asn Ser Gly Arg Leu Ser Gly Pro Ala Glu Leu Arg Ser Phe
                    605                      610                      615
Asn Met Pro Ser Leu Asp Lys Met Asp Gly Ser Met Pro Ser Glu
                    620                      625                      630
Met Glu Ser Ser Arg Asn Asp Thr Lys Asp Asp Leu Gly Asn Leu
                    635                      640                      645
Asn Val Pro Asp Ser Ser Leu Pro Ala Glu Asn Glu Ala Thr Gly
                    650                      655                      660
Pro Gly Phe Val Pro Pro Pro Leu Ala Pro Ile Arg Gly Pro Leu
                    665                      670                      675
Phe Pro Val Asp Ala Arg Gly Pro Phe Leu Arg Arg Gly Pro Pro
                    680                      685                      690
Phe Pro Pro Pro Pro Pro Gly Ala Met Phe Gly Ala Ser Arg Asp
```

391

```
Tyr Phe Pro Pro Arg Asp Phe Pro Gly Pro Pro Pro Ala Pro Phe
                710                 715             720

Ala Met Arg Asn Val Tyr Pro Pro Arg Gly Phe Pro Pro Tyr Leu
                725                 730                 735

Pro Pro Arg Pro Gly Phe Phe Pro Pro Pro Pro His Ser Glu Gly
                740                 745             750

Arg Ser Glu Phe Pro Ser Gly Leu Ile Pro Pro Ser Asn Glu Pro
                755                 760                 765

Ala Thr Glu His Pro Glu Pro Gln Gln Glu Thr
                770                 775
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<210> 337
<211> 2997
<212> DNA
<213> Homosapiens

<400> 337

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cgaagcccag cggctccccg actccttcaa ggacagcccc agtaagggcc 100

ttggaccttg cggatggatt ttggtggcgt tctcattctt attcaccgtt 150

ataactttcc caatctcaat atggatgtgc ataaagatta taaaagagta 200

tgaaagagcc atcatcttta gattgggtcg cattttacaa ggaggagcca 250

aaggacctgg tttgtttttt attctgccat gcactgacag cttcatcaaa 300

gtggacatga gaactatttc atttgatatt cctcctcagg agatcctgac 350

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cgtcttttgg cacaaactac tctgaggaat gttctgggca ccaagaatct 500

ttctcagatc ctctctgaca gagaagaaat tgcacacaac atgcagtcta 550

ctctggatga tgccactgat gcctggggaa taaaggtgga gcgtgtggaa 600

attaaggatg tgaaactacc tgtgcagctc cagagagcta tggctgcaga 650

agcagaagcg tcccgcgagg cccgcgccaa ggttattgca gccgaaggag 700

aaatgaatgc atccagggct ctgaaagaag cctccatggt catcactgaa 750

tctcctgcag cccttcagct ccgatacctg cagacactga ccaccattgc 800

tgctgagaaa aactcaacaa ttgtcttccc tctgcccata gatatgctgc 850

aaggaatcat aggggcaaaa cacagccatc taggctagtg tagagatgag 900

cgctagcctt ccaagcatga agtcggggac caaattagcc tttaactcat 950

aaagagaggg tagggctttt cttttttccat atgtcaattg tggtgttccc 1000
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agaatgtata gcagttataa aaataggtga aagaattgtt agcttgtaaa 1050

tactgagaga ttggtgattt atataaggta atctgttagt cttaaaatag 1100

ttaaaagttt gtatttttag attattatgt agtaggttag atccctcttg 1150

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gcaacctccg cctcctgggt tcaagagatt ctcctgcctc agcctcccca 1450

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tttcaaacca gctaaatatt tgtcacaaaa gtgacttttt tctcactgtt 1950

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aacccattca ttacatagta taaggaattc acagtatatt gactatatag 2200

tgtctaatga ctgggcagat actgtcaact tacaatatct atatagagag 2250

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ttcccagcac gagcctttat agctctcttt agctcaacca ctctgtccat 2550

ccagccaatg gatgtccttc cctgtaccca attcaagctt attttaggga 2600
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393

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agccttgaaa ctaccatgta tctggctcta gctgagttat tgaggattga 2650

gccagtgcaa cgttaaactc agtgcactta catttgattt aaatgatggt 2700

tttatctgtt gtgtgaagtg gttcaccctt gaggaccagg agcctccata 2750

tcctgactga aaaccttttc tgagacttag agtaacagta cttttggttc 2800

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gcctcccttt ccaacaatgt acataataaa gtgtatgcac tttcact 2997
```

<210> 338
<211> 288
<212> PRT
<213> Homosapiens

<400> 338

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Met Ala Glu Lys Arg Asp Thr Arg Asp Ser Glu Ala Gln Arg Leu
  1               5                  10                  15

Pro Asp Ser Phe Lys Asp Ser Pro Ser Lys Gly Leu Gly Pro Cys
                 20                  25                  30

Gly Trp Ile Leu Val Ala Phe Ser Phe Leu Phe Thr Val Ile Thr
                 35                  40                  45

Phe Pro Ile Ser Ile Trp Met Cys Ile Lys Ile Ile Lys Glu Tyr
                 50                  55                  60

Glu Arg Ala Ile Ile Phe Arg Leu Gly Arg Ile Leu Gln Gly Gly
                 65                  70                  75

Ala Lys Gly Pro Gly Leu Phe Phe Ile Leu Pro Cys Thr Asp Ser
                 80                  85                  90

Phe Ile Lys Val Asp Met Arg Thr Ile Ser Phe Asp Ile Pro· Pro
                 95                 100                 105

Gln Glu Ile Leu Thr Lys Asp Ser Val Thr Ile Ser Val Asp Gly
                110                 115                 120

Val Val Tyr Tyr Arg Val Gln Asn Ala Thr Leu Ala Val Ala Asn
                125                 130                 135

Ile Thr Asn Ala Asp Ser Ala Thr Arg Leu Leu Ala Gln Thr Thr
                140                 145                 150

Leu Arg Asn Val Leu Gly Thr Lys Asn Leu Ser Gln Ile Leu Ser
                155                 160                 165

Asp Arg Glu Glu Ile Ala His Asn Met Gln Ser Thr Leu Asp Asp
                170                 175                 180

Ala Thr Asp Ala Trp Gly Ile Lys Val Glu Arg Val Glu Ile Lys
                185                 190                 195

Asp Val Lys Leu Pro Val Gln Leu Gln Arg Ala Met Ala Ala Glu
                200                 205                 210
```

394

Ala Glu Ala Ser Arg Glu Ala Arg Ala Lys Val Ile Ala Ala Glu
                  215             220                 225

Gly Glu Met Asn Ala Ser Arg Ala Leu Lys Glu Ala Ser Met Val
                  230             235                 240

Ile Thr Glu Ser Pro Ala Ala Leu Gln Leu Arg Tyr Leu Gln Thr
                  245             250                 255

Leu Thr Thr Ile Ala Ala Glu Lys Asn Ser Thr Ile Val Phe Pro
                  260             265                 270

Leu Pro Ile Asp Met Leu Gln Gly Ile Ile Gly Ala Lys His Ser
                  275             280                 285

His Leu Gly

<210> 339
<211> 3878
<212> DNA
<213> Homosapiens

<220>
<221> unsure
<222> 1996
<223> unknown base

<400> 339
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 ggatgacctg gaaggagatg tttcgaccac ttggcacagt aacgatgacg 200

 atgtgtatag ggcgcctcca attgaccgtt ccatccttcc cactgctcca 250

 cgggctgctc gggaacccaa tatcgaccgg agccgtcttc ccaaatcgcc 300

 accctacact gcttttctag aaacctacc ctatgatgtt acagaagagt 350

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 tatgattcag accggtatcg ggatgggtat cgggatgggt atcgggatgg 750

 cccacgccgg gatatggatc gatatggtgg ccgggatcgc tatgatgacc 800

 gaggcagcag agactatgat agaggctatg attcccggat aggcagtggc 850

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cggggaccgc tatgaagacc gatatgacag acgggatgat cggtcgtgga 950

gctccagaga tgattactct cgggatgatt ataggcgtga tgatagaggt 1000

ccccccccaaa gacccaaact gaatctaaag cctcggagta ctcctgaaga 1050

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396

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gaaagttttg aatatatcca cattctattg aaaccttgaa actaaaaatt 2750

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tggattcatg aggtggccag accaatgtgt tgttttgttg ttgtttttttt 3150

tttaagcttc ccttgagaga ataaatggta atggagagaa tcatttaaca 3200

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aattggtgtg gattggccag tagctaagaa gtgggctttt aaagagtatt 3500

gaagattgaa agggttttttc tttctttttt aaaaaagaaa aacaaactat 3550

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cttccaaata gttatatcca aaactgtttt tccctctccc ctaccttgtc 3650

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aaaaaaaaac tctagagtcg aggaattc 3878
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<210> 340
<211> 611
<212> PRT
<213> Homosapiens
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<400> 340
Met Ala Ala Ser Ala Lys Lys Lys Asn Lys Lys Gly Lys Thr Ile
1                5                    10                        15

Ser Leu Thr Asp Phe Leu Ala Glu Asp Gly Gly Thr Gly Gly Gly
              20                25                        30

Ser Thr Tyr Val Ser Lys Pro Val Ser Trp Ala Asp Glu Thr Asp
              35                40                        45

Asp Leu Glu Gly Asp Val Ser Thr Thr Trp His Ser Asn Asp Asp
              50                55                        60

Asp Val Tyr Arg Ala Pro Pro Ile Asp Arg Ser Ile Leu Pro Thr
              65                70                        75

Ala Pro Arg Ala Ala Arg Glu Pro Asn Ile Asp Arg Ser Arg Leu
              80                85                        90

Pro Lys Ser Pro Pro Tyr Thr Ala Phe Leu Gly Asn Leu Pro Tyr
              95                100                       105

Asp Val Thr Glu Glu Ser Ile Lys Glu Phe Phe Arg Gly Leu Asn
              110               115                       120

Ile Ser Ala Val Arg Leu Pro Arg Glu Pro Ser Asn Pro Glu Arg
              125               130                       135

Leu Lys Gly Phe Gly Tyr Ala Glu Phe Glu Asp Leu Asp Ser Leu
              140               145                       150

Leu Ser Ala Leu Ser Leu Asn Glu Glu Ser Leu Gly Asn Arg Arg
              155               160                       165

Ile Arg Val Asp Val Ala Asp Gln Ala Gln Asp Lys Asp Arg Asp
              170               175                       180

Asp Arg Ser Phe Gly Arg Asp Arg Asn Arg Asp Ser Asp Lys Thr
              185               190                       195

Asp Thr Asp Trp Arg Ala Arg Pro Ala Thr Asp Ser Phe Asp Asp
              200               205                       210

Tyr Pro Pro Arg Arg Gly Asp Asp Ser Phe Gly Asp Lys Tyr Arg
              215               220                       225

Asp Arg Tyr Asp Ser Asp Arg Tyr Arg Asp Gly Tyr Arg Asp Gly
              230               235                       240

Tyr Arg Asp Gly Pro Arg Arg Asp Met Asp Arg Tyr Gly Gly Arg
              245               250                       255

Asp Arg Tyr Asp Asp Arg Gly Ser Arg Asp Tyr Asp Arg Gly Tyr
              260               265                       270

Asp Ser Arg Ile Gly Ser Gly Arg Arg Ala Phe Gly Ser Gly Tyr
              275               280                       285

Arg Arg Asp Asp Asp Tyr Arg Gly Gly Gly Asp Arg Tyr Glu Asp
              290               295                       300

Arg Tyr Asp Arg Arg Asp Asp Arg Ser Trp Ser Ser Arg Asp Asp
              305               310                       315

398

```
Tyr Ser Arg Asp Asp Tyr Arg Arg Asp Asp Arg Gly Pro Pro Gln
            320                 325                     330

Arg Pro Lys Leu Asn Leu Lys Pro Arg Ser Thr Pro Glu Glu Asp
            335                 340                     345

Asp Ser Ser Ala Ser Thr Ser Gln Ser Thr Arg Ala Ala Ser Ile
            350                 355                     360

Phe Gly Gly Ala Lys Pro Val Asp Thr Ala Ala Arg Glu Arg Glu
            365                 370                     375

Val Glu Glu Arg Leu Gln Lys Glu Gln Glu Lys Leu Gln Arg Gln
            380                 385                     390

Trp Asn Glu Pro Lys Leu Glu Arg Arg Pro Arg Glu Arg His Pro
            395                 400                     405

Ser Trp Arg Ser Glu Glu Thr Gln Glu Arg Glu Arg Ser Arg Thr
            410                 415                     420

Gly Ser Glu Ser Ser Gln Thr Gly Thr Ser Thr Thr Ser Ser Arg
            425                 430                     435

Asn Ala Arg Arg Arg Glu Ser Glu Lys Ser Leu Glu Asn Glu Thr
            440                 445                     450

Leu Asn Lys Glu Glu Asp Cys His Ser Pro Thr Ser Lys Pro Pro
            455                 460                     465

Lys Pro Asp Gln Pro Leu Lys Val Met Pro Ala Pro Pro Pro Lys
            470                 475                     480

Glu Asn Ala Trp Val Lys Arg Ser Ser Asn Pro Pro Ala Arg Ser
            485                 490                     495

Gln Ser Ser Asp Thr Glu Gln Gln Ser Pro Thr Ser Gly Gly Gly
            500                 505                     510

Lys Val Ala Pro Ala Gln Pro Ser Glu Glu Gly Pro Gly Arg Lys
            515                 520                     525

Asp Glu Asn Lys Val Asp Gly Met Asn Ala Pro Lys Gly Gln Thr
            530                 535                     540

Gly Asn Ser Ser Arg Gly Pro Gly Asp Gly Gly Asn Arg Asp His
            545                 550                     555

Trp Lys Glu Ser Asp Arg Lys Asp Gly Lys Lys Asp Gln Asp Ser
            560                 565                     570

Arg Ser Ala Pro Glu Pro Lys Lys Pro Glu Glu Asn Pro Ala Ser
            575                 580                     585

Lys Phe Ser Ser Ala Ser Lys Tyr Ala Ala Leu Ser Val Asp Gly
            590                 595                     600

Glu Asp Glu Asn Glu Gly Glu Asp Tyr Ala Glu
            605                 610
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<210> 341
<211> 997
<212> DNA

<213> Homosapiens

<400> 341
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agcgcaaagc gacccctgcc ctccatcctg actgctcctc ctaagagaga 100

tggcaccggc cagagcagga ttctgccccc ttctgctgct tctgctgctg 150

gggctgtggg tggcagagat cccagtcagt gccaagccca agggcatgac 200

ctcatcacag tggtttaaaa ttcagcacat gcagcccagc cctcaagcat 250

gcaactcagc catgaaaaac attaacaagc acacaaaacg gtgcaaagac 300

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acgggcccgt gtccctgacc atgtgtaagc tcacctcagg gaagtatccg 450

aactgcaggt acaaagagaa gcgacagaac aagtcttacg tagtggcctg 500

taagcctccc cagaaaaagg actctcagca attccacctg gttcctgtac 550

acttggacag agtcctttag gtttccagac tggcttgctc tttggctgac 600

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tcttttgtt gctgttttcc cagatgctta tccccaagaa acagcaagct 800

caggtctgtg ggttccctgg tctatgccat tgcacatgtc tcccctgccc 850

cctggcatta gggcagcatg acaaggagag gaaataaatg gaaggggggc 900

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 950

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 997
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<210> 342
<211> 156
<212> PRT
<213> Homosapiens

<400> 342
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Met Ala Pro Ala Arg Ala Gly Phe Cys Pro Leu Leu Leu Leu Leu
 1               5                  10                  15

Leu Leu Gly Leu Trp Val Ala Glu Ile Pro Val Ser Ala Lys Pro
                20                  25                  30

Lys Gly Met Thr Ser Ser Gln Trp Phe Lys Ile Gln His Met Gln
                35                  40                  45

Pro Ser Pro Gln Ala Cys Asn Ser Ala Met Lys Asn Ile Asn Lys
                    50                  55                  60

His Thr Lys Arg Cys Lys Asp Leu Asn Thr Phe Leu His Glu Pro
                    65                  70                  75
```

400

```
Phe Ser Ser Val Ala Ala Thr Cys Gln Thr Pro Lys Ile Ala Cys
                80                  85              90

Lys Asn Gly Asp Lys Asn Cys His Gln Ser His Gly Pro Val Ser
                95                 100             105

Leu Thr Met Cys Lys Leu Thr Ser Gly Lys Tyr Pro Asn Cys Arg
               110                 115             120

Tyr Lys Glu Lys Arg Gln Asn Lys Ser Tyr Val Val Ala Cys Lys
               125                 130             135

Pro Pro Gln Lys Lys Asp Ser Gln Gln Phe His Leu Val Pro Val
               140                 145             150

His Leu Asp Arg Val Leu
               155
```

<210> 343
<211> 2265
<212> DNA
<213> Homosapiens

<400> 343

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ctccatccaa ggcccagagt ctgtgagagc cccagagcag gggtccctga 150

cggttcaatg ccactataag caaggatggg agacctacat taagtggtgg 200

tgccgagggg tgcgctggga tacatgcaag atcctcattg aaaccagagg 250

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cactacatgc tcctggtatt tgtgaaggtg cccatcttgc tcatcttggt 550

cactgccatc ctctggttga aggggtctca gagggtccct gaggagccag 600

gggaacagcc tatctacatg aacttctccg aacctctgac taaagacatg 650

gccacttaga gagatggatc tgcagagcct tcctgccctg ccacgtttc 700

cagaagagac tcgggctgtg gaaggaacat ctacgagtcc tcgggatgca 750

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gcacctccct gttctgcaca gctcagggac ttagccaggt cctctcctga 850

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gtagagatgg agctcaagca ctggacgact ctgtccccac tgctggaata 950

actcgggcac agagcatggg accaaagtac agaaagaggt tggggggagac 1000
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ttgcctgaga  acctgatata  tccgtgtttt  taaattttt   ttttctagc   1100

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atgttgaaat  catgttacta  atgaaaactg  tcctagggaa  gtggttctgt  1550

ctcctcacag  gcttcaccca  cggcgatgag  gcccttgaat  gtggtcactt  1600

tgtgctgtat  ggttgaggga  ccctcacacc  aaagggacct  tcccatgtga  1650

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ttctaatagg  gagtactgac  tgtcagcagt  ggataaagga  gagggaccc   1800

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caaagagaaa  ctttctctga  ctttgaactg  aatttaggtc  tctggccaat  1900

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atccgaccag  acccagggag  gacggcaccg  ctccgcggga  gggaaagcca  2100

aagcatggtg  cttcaccagc  tggactcagg  ggcgagggga  catggcgct   2150

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aaaaaaaaaa  aaaaa       2265
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<210> 344
<211> 201
<212> PRT
<213> Homosapiens

<400> 344
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Met Trp Leu Pro Pro Ala Leu Leu Leu Ser Leu Ser Gly Cys
1               5                   10                  15

Phe Ser Ile Gln Gly Pro Glu Ser Val Arg Ala Pro Glu Gln Gly
                20                  25                  30
```

```
Ser Leu Thr Val Gln Cys His Tyr Lys Gln Gly Trp Glu Thr Tyr
            35              40              45

Ile Lys Trp Trp Cys Arg Gly Val Arg Trp Asp Thr Cys Lys Ile
            50              55              60

Leu Ile Glu Thr Arg Gly Ser Glu Gln Gly Glu Lys Ser Asp Arg
            65              70              75

Val Ser Ile Lys Asp Asn Gln Lys Asp Arg Thr Phe Thr Val Thr
            80              85              90

Met Glu Gly Leu Arg Arg Asp Asp Ala Asp Val Tyr Trp Cys Gly
            95              100             105

Ile Glu Arg Arg Gly Pro Asp Leu Gly Thr Gln Val Lys Val Ile
            110             115             120

Val Asp Pro Glu Gly Ala Ala Ser Thr Thr Ala Ser Ser Pro Thr
            125             130             135

Asn Ser Asn Met Ala Val Phe Ile Gly Ser His Lys Arg Asn His
            140             145             150

Tyr Met Leu Leu Val Phe Val Lys Val Pro Ile Leu Leu Ile Leu
            155             160             165

Val Thr Ala Ile Leu Trp Leu Lys Gly Ser Gln Arg Val Pro Glu
            170             175             180

Glu Pro Gly Glu Gln Pro Ile Tyr Met Asn Phe Ser Glu Pro Leu
            185             190             195

Thr Lys Asp Met Ala Thr
            200
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<210> 345
<211> 3501
<212> DNA
<213> Homosapiens

<400> 345

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ggccggaatc cgcgcgcagc ccgggtgcaa gttctctcct gttgccctga 150

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acctggcccct gctctggcct ggctcctgct cctgagcctg ctggcggatt 250

gtctgaaagc tgctcagtcc cgagacttca cagtgaaaga cattatctac 300

ctccatcctt caaccacacc atatcctggt ggatttaaat gtttcacctg 350

tgaaaaggca gcagacaatt atgagtgcaa ccgatgggct ccagacatct 400

actgccctcg agagaccaga tactgctaca ctcagcacac aatggaagtc 450

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cttatccact ggctgcagag actccgagca tgaaggccac aaggtctgca 550
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cccacgctgt atgtcagtga tagtgtcctg cttgtggttg tggttagggc 700

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gttcaattaa ttttcccaac attcttctcc cagtgctggg aatcacattt 1300

cctctgttct gtgcagaaga caaaaaggca atcataaaag tttgttatat 1350

ttgtgggggt gcctggagga ggattttcct caacttaatg gagccactgt 1400

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tggctcagcc agcttcttac tccatctgca gttcatactg ccaaagagct 1700

cccacttcca aatccccagt gactttatgg agaagattct gcattaaatt 1750

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agtagaccag tgaggtgatt gcaagactaa caaggagact caatgggaag 1850

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catccttctt gtattttttg taccccaagt tacaattttt cttcttcctt 1950

gtaaataatt taaacagtat ttattttgt aaggcataac tagaaactaa 2000

aatatattct aaaaaattca ttattctgaa caaagtgatc aaattagaat 2050

acatatttt caacagtggt agagctttta atatatgttt attgaaagtt 2100

atctataata cttgcaccag tgttgaaaaa agttaacatg taggcaagag 2150
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ttttcagacg tgtttttgtg aaacttggta gaaccatggc taataaagag 2300

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agcactttac ataagttagg attaatccct gcaagaatcc tataaagaat 2600

gttactagca tttacacttc ccaaatgaag gtaccaaagc tcaaacgcaa 2650

tgttgtgaag ctgtttcctt cagatttagg ttatgtggga tgatgtggga 2700

ttgaagagga aagaaaggtg ggattatccc cctaggaaga ctttcaggcc 2750

tgacttcata ggaattcatc catcttatca tgtggagttt atctcaccct 2800

gctgttgcag gatgctattt gcatgtgtcc ccaggtgatg ttttttcttt 2850

ggggagtagg ggtttggctt cctcattcat ccctcttgct aaaagaggag 2900

atagttgatg ttgcatctaa agatgctata agacaatgaa agtttgatgt 2950

tgtacatacc tacaagtacc atttttgtgc atgattacac tccactgaca 3000

tcttccaagt actacatgtg attgaataag aaacaagaaa gtgaccacac 3050

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tcaaccacca cccagggagt gcttgcagac tctgcataga tgttgctgca 3150

tgcgtcccat gtgcctgtca gaatggcagt gtttaattct cttgaaagaa 3200

agttatttgc tcactatccc cagcctcaag gagccaagga agagtcattc 3250

acatggaagg tccgggactg gtcagccact ctgacttttc taccacatta 3300

aattctccat tacatctcac tattggtaat ggcttaagtg taaagagcca 3350

tgatgtgtat attaagctat gtgccacata tttattttta gactctccac 3400

agcattcatg tcaatatggg attaatgcct aaactttgta aatattgtac 3450

agtttgtaaa tcaatgaata aaggttttga gtgtaaaaaa aaaaaaaaaa 3500

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<210> 346
<211> 171
<212> PRT
<213> Homosapiens

<400> 346
Met Glu Pro Gly Pro Ala Leu Ala Trp Leu Leu Leu Leu Ser Leu

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  1                5                        10                       15
Leu Ala Asp Cys Leu Lys Ala Ala Gln Ser Arg Asp Phe Thr Val
                20                    25                       30

Lys Asp Ile Ile Tyr Leu His Pro Ser Thr Thr Pro Tyr Pro Gly
                35                    40                       45

Gly Phe Lys Cys Phe Thr Cys Glu Lys Ala Ala Asp Asn Tyr Glu
                50                    55                       60

Cys Asn Arg Trp Ala Pro Asp Ile Tyr Cys Pro Arg Glu Thr Arg
                65                    70                       75

Tyr Cys Tyr Thr Gln His Thr Met Glu Val Thr Gly Asn Ser Ile
                80                    85                       90

Ser Val Thr Lys Arg Cys Val Pro Leu Glu Glu Cys Leu Ser Thr
                95                    100                      105

Gly Cys Arg Asp Ser Glu His Glu Gly His Lys Val Cys Thr Ser
                110                   115                      120

Cys Cys Glu Gly Asn Ile Cys Asn Leu Pro Leu Pro Arg Asn Glu
                125                   130                      135

Thr Asp Ala Thr Phe Ala Thr Thr Ser Pro Ile Asn Gln Thr Asn
                140                   145                      150

Gly His Pro Arg Cys Met Ser Val Ile Val Ser Cys Leu Trp Leu
                155                   160                      165

Trp Leu Gly Leu Met Leu
                170
```

<400> 347

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gccaagacct ggccatcagc ctggctgcag gggcctgcag agccagctgc 100

acttttcag gtatggggga gggccaggca ccatgaagcc agtgtgggtc 150

gccacccttc tgtggatgct actgctggtg cccaggctgg gggccgcccg 200

gaaggggtcc ccagaagagg cctccttcta ctatggaacc ttccctcttg 250

gcttctcctg gggcgtgggc agttctgcct accagacgga gggcgcctgg 300

gaccaggacg ggaaagggcc tagcatctgg gacgtcttca cacacagtgg 350

gaaggggaaa gtgcttggga atgagacggc agatgtagcc tgtgacggct 400

actacaaggt ccaggaggac atcattctgc tgagggaact gcacgtcaac ·450

cactaccgat tctccctgtc ttggccccgg ctcctgccca caggcatccg 500

agccgagcag gtgaacaaga agggaatcga attctacagt gatcttatcg 550
```

```
atgcccttct gagcagcaac atcactccca tcgtgacctt gcaccactgg 600

gatctgccac agctgctcca ggtcaaatac ggtgggtggc agaatgtgag 650

catggccaac tacttcagag actacgccaa cctgtgcttt gaggcctttg 700

gggaccgtgt gaagcactgg atcacgttca gtgatcctcg ggcaatggca 750

gaaaaaggct atgagacggg ccaccatgcg ccgggcctga agctccgcgg 800

caccggcctg tacaaggcag cacaccacat cattaaggcc cacgccaaaa 850

cctggcattc ttataacacc acgtggcgca gcaagcagca aggtctggtg 900

ggaatttcac tgaactgtga ctggggggaa cctgtggaca ttagtaaccc 950

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attggaagaa agagtgcaga gcaaggcctg gagatgtcga ggttaccggt 1100

gttctcactc caggagaaga gctacattaa aggcacatcc gatttcttgg 1150

gattaggtca ttttactact cggtacatca cggaaaggaa ctacccctcc 1200

cgccaggggc ccagctacca gaacgatcgt gacttgatag agctggttga 1250

cccaaactgg ccagatctgg ggtctaaatg gctatattct gtgccatggg 1300

gatttaggag gctccttaac tttgctcaga ctcaatacgg tgatcctccc 1350

atatatgtga tggaaaatgg agcatctcaa aaattccact gtactcaatt 1400

atgtgatgag tggagaattc aataccttaa aggatacata aatgaaatgc 1450

taaaagctat aaaagatggt gctaatataa aggggtatac ttcctggtct 1500

ctgttggata agtttgaatg ggagaaagga tactcagata gatatggatt 1550

ctactatgtt gaatttaacg acagaaataa gcctcgctat ccaaaggctt 1600

cagttcaata ttacaagaag attatcattg ccaatgggtt tcccaatcca 1650

agagaggtgg aaagttggta cctcaaagct ttggaaactt gctctatcaa 1700

caatcagatg cttgctgcag agccttttgct aagtcacatg caaatggtta 1750

cggagatcgt ggtacccact gtctgctccc tctgtgtcct catcactgct 1800

gttctactaa tgctcctcct gaggaggcag agctgagaca ggattatcaa 1850

ttttggagct tcataagaga atcttcagga tcttcctccc ttttctgctt 1900

tgagggtttc catacattgc tgttttcagg ttctacaata attacctttt 1950

tttctctttc tcttttggc ttgtgctggg atttaagaat tagaaaataa 2000

aaataagcag aaatta 2016
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&lt;210&gt; 348
&lt;211&gt; 567
&lt;212&gt; PRT

<213> Homosapiens

<400> 348

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Met Lys Pro Val Trp Val Ala Thr Leu Leu Trp Met Leu Leu Leu
 1               5                  10                  15

Val Pro Arg Leu Gly Ala Ala Arg Lys Gly Ser Pro Glu Glu Ala
               20                  25                  30

Ser Phe Tyr Tyr Gly Thr Phe Pro Leu Gly Phe Ser Trp Gly Val
               35                  40                  45

Gly Ser Ser Ala Tyr Gln Thr Glu Gly Ala Trp Asp Gln Asp Gly
               50                  55                  60

Lys Gly Pro Ser Ile Trp Asp Val Phe Thr His Ser Gly Lys Gly
               65                  70                  75

Lys Val Leu Gly Asn Glu Thr Ala Asp Val Ala Cys Asp Gly Tyr
               80                  85                  90

Tyr Lys Val Gln Glu Asp Ile Ile Leu Leu Arg Glu Leu His Val
               95                 100                 105

Asn His Tyr Arg Phe Ser Leu Ser Trp Pro Arg Leu Leu Pro Thr
              110                 115                 120

Gly Ile Arg Ala Glu Gln Val Asn Lys Lys Gly Ile Glu Phe Tyr
              125                 130                 135

Ser Asp Leu Ile Asp Ala Leu Leu Ser Ser Asn Ile Thr Pro Ile
              140                 145                 150

Val Thr Leu His His Trp Asp Leu Pro Gln Leu Leu Gln Val Lys
              155                 160                 165

Tyr Gly Gly Trp Gln Asn Val Ser Met Ala Asn Tyr Phe Arg Asp
              170                 175                 180

Tyr Ala Asn Leu Cys Phe Glu Ala Phe Gly Asp Arg Val Lys His
              185                 190                 195

Trp Ile Thr Phe Ser Asp Pro Arg Ala Met Ala Glu Lys Gly Tyr
              200                 205                 210

Glu Thr Gly His His Ala Pro Gly Leu Lys Leu Arg Gly Thr Gly
              215                 220                 225

Leu Tyr Lys Ala Ala His His Ile Ile Lys Ala His Ala Lys Thr
              230                 235                 240

Trp His Ser Tyr Asn Thr Thr Trp Arg Ser Lys Gln Gln Gly Leu
              245                 250                 255

Val Gly Ile Ser Leu Asn Cys Asp Trp Gly Glu Pro Val Asp Ile
              260                 265                 270

Ser Asn Pro Lys Asp Leu Glu Ala Ala Glu Arg Tyr Leu Gln Phe
              275                 280                 285

Cys Leu Gly Trp Phe Ala Asn Pro Ile Tyr Ala Gly Asp Tyr Pro
              290                 295                 300
```

408

```
Gln Val Met Lys Asp Tyr Ile Gly Arg Lys Ser Ala Glu Gln Gly
            305                 310                 315

Leu Glu Met Ser Arg Leu Pro Val Phe Ser Leu Gln Glu Lys Ser
            320                 325                 330

Tyr Ile Lys Gly Thr Ser Asp Phe Leu Gly Leu Gly His Phe Thr
            335                     340                 345

Thr Arg Tyr Ile Thr Glu Arg Asn Tyr Pro Ser Arg Gln Gly Pro
            350                 355                 360

Ser Tyr Gln Asn Asp Arg Asp Leu Ile Glu Leu Val Asp Pro Asn
            365                 370                 375

Trp Pro Asp Leu Gly Ser Lys Trp Leu Tyr Ser Val Pro Trp Gly
            380                 385                 390

Phe Arg Arg Leu Leu Asn Phe Ala Gln Thr Gln Tyr Gly Asp Pro
            395                 400                 405

Pro Ile Tyr Val Met Glu Asn Gly Ala Ser Gln Lys Phe His Cys
            410                 415                 420

Thr Gln Leu Cys Asp Glu Trp Arg Ile Gln Tyr Leu Lys Gly Tyr
            425                 430                 435

Ile Asn Glu Met Leu Lys Ala Ile Lys Asp Gly Ala Asn Ile Lys
            440                 445                 450

Gly Tyr Thr Ser Trp Ser Leu Leu Asp Lys Phe Glu Trp Glu Lys
            455                 460                 465

Gly Tyr Ser Asp Arg Tyr Gly Phe Tyr Tyr Val Glu Phe Asn Asp
            470                 475                 480

Arg Asn Lys Pro Arg Tyr Pro Lys Ala Ser Val Gln Tyr Tyr Lys
            485                 490                 495

Lys Ile Ile Ile Ala Asn Gly Phe Pro Asn Pro Arg Glu Val Glu
            500                 505                 510

Ser Trp Tyr Leu Lys Ala Leu Glu Thr Cys Ser Ile Asn Asn Gln
            515                 520                 525

Met Leu Ala Ala Glu Pro Leu Leu Ser His Met Gln Met Val Thr
            530                 535                 540

Glu Ile Val Val Pro Thr Val Cys Ser Leu Cys Val Leu Ile Thr
            545                 550                 555

Ala Val Leu Leu Met Leu Leu Leu Arg Arg Gln Ser
            560                 565
```

<210> 349
<211> 1402
<212> DNA
<213> Homosapiens

<400> 349
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tttagccgcg gtgtctctct ctctggcctt ggcctctgtg actatcaggt 100
```

```
cctcgcgctg ccgcggcatc caggcgttca gaaactcgtt ttcatcttct 150

tggtttcatc ttaataccaa cgtcatgtct ggttctaatg gttccaaaga 200

aaattctcac aataaggctc ggacgtctcc ttacccaggt tcaaaagttg 250

aacgaagcca ggttcctaat gagaaagtgg gctggcttgt tgagtggcaa 300

gactataagc ctgtggaata cactgcagtc tctgtcttgg ctggacccag 350

gtgggcagat cctcagatca gtgaaagtaa tttttctccc aagtttaacg 400

aaaaggatgg gcatgttgag agaaagagca gaatggcct gtatgagatt 450

gaaaatggaa gaccgagaaa tcctgcagga cggactggac tggtgggccg 500

ggggcttttg gggcgatggg gcccaaatca cgctgcagat cccattataa 550

ccagatggaa aagggatagc agtggaaata aaatcatgca tcctgtttct 600

gggaagcata tcttacaatt tgttgcaata aaaaggaaag actgtggaga 650

atgggcaatc ccaggggga tggtggatcc aggagagaag attagtgcca 700

cactgaaaag agaatttggt gaggaagctc tcaactcctt acagaaaacc 750

agtgctgaga agagagaaat agaggaaaag ttgcacaaac tcttcagcca 800

agaccaccta gtgatatata agggatatgt tgatgatcct cgaaacactg 850

ataatgcatg gatggagaca gaagctgtga actaccatga cgaaacaggt 900

gagataatgg ataatcttat gctagaagct ggagatgatg ctggaaaagt 950

gaaatgggtg gacatcaatg ataaactgaa gctttatgcc agtcactctc 1000

aattcatcaa acttgtggct gagaaacgag atgcacactg gagcgaggac 1050

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aggcccacag aggagcatat actgaaaaga aggcagtatc acagaattta 1150

tactataaaa agggcagggt aggccacttg gcctatttac tttcaaaaca 1200

atttgcattt agagtgtttc gcatcagaat aacatgagta agatgaactg 1250

gaacacaaaa ttttcagctc tttggtcaaa aggaatataa gtaatcatat 1300

tttgtatgta ttcgatttaa gcatggctta aattaaattt aaacaactaa 1350

tgctctttga agaatcataa tcagaataaa gataaattct tgatcagcta 1400

ta 1402
```

<210> 350
<211> 350
<212> PRT
<213> Homosapiens

<400> 350
Met Ala Gly Arg Leu Leu Gly Lys Ala Leu Ala Ala Val Ser Leu
1               5                   10                  15

410

```
Ser Leu Ala Leu Ala Ser Val Thr Ile Arg Ser Ser Arg Cys Arg
              20                  25                      30

Gly Ile Gln Ala Phe Arg Asn Ser Phe Ser Ser Ser Trp Phe His
              35                  40                      45

Leu Asn Thr Asn Val Met Ser Gly Ser Asn Gly Ser Lys Glu Asn
              50                  55                      60

Ser His Asn Lys Ala Arg Thr Ser Pro Tyr Pro Gly Ser Lys Val
              65                  70                      75

Glu Arg Ser Gln Val Pro Asn Glu Lys Val Gly Trp Leu Val Glu
              80                  85                      90

Trp Gln Asp Tyr Lys Pro Val Glu Tyr Thr Ala Val Ser Val Leu
              95                  100                     105

Ala Gly Pro Arg Trp Ala Asp Pro Gln Ile Ser Glu Ser Asn Phe
              110                 115                     120

Ser Pro Lys Phe Asn Glu Lys Asp Gly His Val Glu Arg Lys Ser
              125                 130                     135

Lys Asn Gly Leu Tyr Glu Ile Glu Asn Gly Arg Pro Arg Asn Pro
              140                 145                     150

Ala Gly Arg Thr Gly Leu Val Gly Arg Gly Leu Leu Gly Arg Trp
              155                 160                     165

Gly Pro Asn His Ala Ala Asp Pro Ile Ile Thr Arg Trp Lys Arg
              170                 175                     180

Asp Ser Ser Gly Asn Lys Ile Met His Pro Val Ser Gly Lys His
              185                 190                     195

Ile Leu Gln Phe Val Ala Ile Lys Arg Lys Asp Cys Gly Glu Trp
              200                 205                     210

Ala Ile Pro Gly Gly Met Val Asp Pro Gly Glu Lys Ile Ser Ala
              215                 220                     225

Thr Leu Lys Arg Glu Phe Gly Glu Glu Ala Leu Asn Ser Leu Gln
              230                 235                     240

Lys Thr Ser Ala Glu Lys Arg Glu Ile Glu Glu Lys Leu His Lys
              245                 250                     255

Leu Phe Ser Gln Asp His Leu Val Ile Tyr Lys Gly Tyr Val Asp
              260                 265                     270

Asp Pro Arg Asn Thr Asp Asn Ala Trp Met Glu Thr Glu Ala Val
              275                 280                     285

Asn Tyr His Asp Glu Thr Gly Glu Ile Met Asp Asn Leu Met Leu
              290                 295     .                 300

Glu Ala Gly Asp Asp Ala Gly Lys Val Lys Trp Val Asp Ile Asn
              305                 310                     315

Asp Lys Leu Lys Leu Tyr Ala Ser His Ser Gln Phe Ile Lys Leu
              320                 325                     330
```

411

```
Val Ala Glu Lys Arg Asp Ala His Trp Ser Glu Asp Ser Glu Ala
         335                340                345

Asp Cys His Ala Leu
         350
```

<210> 351
<211> 1863
<212> DNA
<213> Homosapiens

<400> 351

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cctctgtctg tgctcccatc ccagggagta taggtggagc ctccagagcc   50

catggacagg gcatgctggg gctgggccag ccccagcggt gtctctaagg  100

cacccctggg atccccactg agctggccta cttcagacag ccagggccca  150

cccctctggc cccccttagtg tccagctcgt ggccccttgg catttccaca  200

agacgccaag atggagattc ccatggggac ccagggctgc ttctcaaaga  250

gcctcctgct ctcagcctca atcctggtcc tctggatgct ccaaggctcc  300

caggcagctc tctacatcca gaagattcca gagcagcctc aaaagaacca  350

ggaccttctc ctgtcagtcc agggtgtccc agacaccttc caggacttca  400

actggtacct gggggaggag acgtacggag cacgaggct atttacctac  450

atccctggga tacaacggcc tcagagggat ggcagtgcca tgggacagcg  500

agacatcgtg ggcttcccca atggttccat gctgctgcgc cgcgcccagc  550

ctacagacag tggcacctac caagtagcca ttaccatcaa ctctgaatgg  600

actatgaagg ccaagactga ggtccaggta gctgaaaaga ataaggagct  650

gcccagtaca cacctgccca ccaacgctgg gatcctggcg ccaccatca  700

ttggatctct tgctgccggg gcccttctca tcagctgcat tgcctatctc  750

ctggtgacaa ggaactggag gggccagagc cacagactgc ctgctccgag  800

gggccaggga tctctgtcca tcttgtgctc ggctgtatcc ccagtgcctt  850

cagtgacgcc agcacatgg atggcgacca cagagaagcc agaattgggc  900

cctgctcatg atgctggtga caacaacatc tatgaagtga tgccctctcc  950

agtcctcctg gtgtcccccca tcagtgacac aaggtccata aacccagccc 1000

ggcccctgcc cacacccca cacctgcagg cggagccaga gaaccaccag 1050

taccagcagg acctgctaaa ccccgaccct gcccctact gccagctggt 1100

gccaacttcc tgatgggtcc tgggccaggc cagccaggga gaagacaagg 1150

ccccagccct cctctgggag cctcacacct gagaccagca ggacaaggcc 1200

attgggggct gtgggccga tgaggtggac tcagccaaag actcagcagc 1250

acatggggca ggtgtcctgg caggggggaca ggagactgta acaggcccag 1300
```

412

```
gtccttgtgc agcccctgaa tgcacgcccg ccttcggtct gttccttcaa 1350

gcaagctggc ctgggccatg tgcctgtgaa aggcaggctc tggccccttt 1400

ccatgccaaa gtcccccaag atctggatat ctggggacaa gatggtggcc 1450

tcaggcctgc ctcccaggca gttggctggg ctcccaactg tctgtcctca 1500

atgccctacc ccaactccac tagtgaccct cagagtcttc tcccctttagg 1550

acaaggcaga caccccacca tgcgggcctc aggtggcaga gaggcccagc 1600

ctcacaggcc tgtggcccca cacaccagtc ccagcaaggt gaccacggct 1650

gctggacccc ttccctgttc aggcaggccc agccctctc agaacctgct 1700

gccagctgct ggtcttggcc cccaccctga atcttactga gtccctctgg 1750

gcagcagctc ccttctccac cccaccccag cacccgtccc aaatgtggcc 1800

tcagcttgtc ctccccttcc ccaaactatg cattcattca gcaataaatg 1850

agcctttgct gca 1863
```

<210> 352
<211> 300
<212> PRT
<213> Homosapiens

<400> '352

```
Met Glu Ile Pro Met Gly Thr Gln Gly Cys Phe Ser Lys Ser Leu
1               5                   10                  15

Leu Leu Ser Ala Ser Ile Leu Val Leu Trp Met Leu Gln Gly Ser
                20                  25                  30

Gln Ala Ala Leu Tyr Ile Gln Lys Ile Pro Glu Gln Pro Gln Lys
                35                  40                  45

Asn Gln Asp Leu Leu Leu Ser Val Gln Gly Val Pro Asp Thr Phe
                50                  55                  60

Gln Asp Phe Asn Trp Tyr Leu Gly Glu Glu Thr Tyr Gly Gly Thr
                65                  70                  75

Arg Leu Phe Thr Tyr Ile Pro Gly Ile Gln Arg Pro Gln Arg Asp
                80                  85                  90

Gly Ser Ala Met Gly Gln Arg Asp Ile Val Gly Phe Pro Asn Gly
                95                  100                 105

Ser Met Leu Leu Arg Arg Ala Gln Pro Thr Asp Ser Gly Thr Tyr
                110                 115                 120

Gln Val Ala Ile Thr Ile Asn Ser Glu Trp Thr Met Lys Ala Lys
                125                 130                 135

Thr Glu Val Gln Val Ala Glu Lys Asn Lys Glu Leu Pro Ser Thr
                140                 145                 150

His Leu Pro Thr Asn Ala Gly Ile Leu Ala Ala Thr Ile Ile Gly
                155                 160                 165
```

413

```
Ser Leu Ala Ala Gly Ala Leu Leu Ile Ser Cys Ile Ala Tyr Leu
                170                 175                 180

Leu Val Thr Arg Asn Trp Arg Gly Gln Ser His Arg Leu Pro Ala
                185                 190                 195

Pro Arg Gly Gln Gly Ser Leu Ser Ile Leu Cys Ser Ala Val Ser
                200                 205                 210

Pro Val Pro Ser Val Thr Pro Ser Thr Trp Met Ala Thr Thr Glu
                215                 220                 225

Lys Pro Glu Leu Gly Pro Ala His Asp Ala Gly Asp Asn Asn Ile
                230                 235                 240

Tyr Glu Val Met Pro Ser Pro Val Leu Leu Val Ser Pro Ile Ser
                245                 250                 255

Asp Thr Arg Ser Ile Asn Pro Ala Arg Pro Leu Pro Thr Pro Pro
                260                 265                 270

His Leu Gln Ala Glu Pro Glu Asn His Gln Tyr Gln Gln Asp Leu
                275                 280                 285

Leu Asn Pro Asp Pro Ala Pro Tyr Cys Gln Leu Val Pro Thr Ser
                290                 295                 300
```

<210> 353
<211> 1152
<212> DNA
<213> Homosapiens

<400> 353

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cttcagaaca ggttctcctt ccccagtcac cagttgctcg agttagaatt 50

gtctgcaatg gccgccctgc agaaatctgt gagctctttc cttatgggga 100

ccctggccac cagctgcctc cttctcttgg ccctcttggt acagggagga 150

gcagctgcgc ccatcagctc ccactgcagg cttgacaagt ccaacttcca 200

gcagccctat atcaccaacc gcaccttcat gctggctaag gaggctagct 250

tggctgataa caacacagac gttcgtctca ttggggagaa actgttccac 300

ggagtcagta tgagtgagcg ctgctatctg atgaagcagg tgctgaactt 350

caccccttgaa gaagtgctgt tccctcaatc tgataggttc cagccttata 400

tgcaggaggt ggtgcccttc ctggccaggc tcagcaacag gctaagcaca 450

tgtcatattg aaggtgatga cctgcatatc cagaggaatg tgcaaaagct 500

gaaggacaca gtgaaaaagc ttggagagag tggagagatc aaagcaattg 550

gagaactgga tttgctgttt atgtctctga gaaatgcctg catttgacca 600

gagcaaagct gaaaaatgaa taactaaccc cctttccctg ctagaaataa 650

caattagatg ccccaaagcg attttttta accaaaagga agatgggaag 700

ccaaactcca tcatgatggg tggattccaa atgaacccct gcgttagtta 750
```

414

```
caaaggaaac caatgccact tttgtttata agaccagaag gtagactttc 800

taagcataga tatttattga taacatttca ttgtaactgg tgttctatac 850

acagaaaaca atttattttt taaataattg ctttttttcca taaaaaagat 900

tactttccat tcctttaggg gaaaaaaccc ctaaatagct tcatgtttcc 950

ataatcagta ctttatattt ataaatgtat ttattattat tataagactg 1000

cattttattt atatcatttt attaatatgg atttatttat agaaacatca 1050

ttcgatattg ctacttgagt gtaaggctaa tattgatatt tatgacaata 1100

attatagagc tataacatgt ttatttgacc tcaataaaca cttggatatc 1150

cc 1152
```

<210> 354
<211> 179
<212> PRT
<213> Homosapiens

<400> 354

```
Met Ala Ala Leu Gln Lys Ser Val Ser Ser Phe Leu Met Gly Thr
  1               5                  10                  15

Leu Ala Thr Ser Cys Leu Leu Leu Leu Ala Leu Leu Val Gln Gly
                  20                  25                  30

Gly Ala Ala Ala Pro Ile Ser Ser His Cys Arg Leu Asp Lys Ser
                  35                  40                  45

Asn Phe Gln Gln Pro Tyr Ile Thr Asn Arg Thr Phe Met Leu Ala
                  50                  55                  60

Lys Glu Ala Ser Leu Ala Asp Asn Asn Thr Asp Val Arg Leu Ile
                  65                  70                  75

Gly Glu Lys Leu Phe His Gly Val Ser Met Ser Glu Arg Cys Tyr
                  80                  85                  90

Leu Met Lys Gln Val Leu Asn Phe Thr Leu Glu Glu Val Leu Phe
                  95                 100                 105

Pro Gln Ser Asp Arg Phe Gln Pro Tyr Met Gln Glu Val Val Pro
                 110                 115                 120

Phe Leu Ala Arg Leu Ser Asn Arg Leu Ser Thr Cys His Ile Glu
                 125                 130                 135

Gly Asp Asp Leu His Ile Gln Arg Asn Val Gln Lys Leu Lys Asp
                 140                 145                 150

Thr Val Lys Lys Leu Gly Glu Ser Gly Glu Ile Lys Ala Ile Gly
                 155                 160                 165

Glu Leu Asp Leu Leu Phe Met Ser Leu Arg Asn Ala Cys Ile
                 170                 175
```

<210> 355
<211> 1060
<212> DNA

<213> Homosapiens

<400> 355

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 gtggccacaa catggctgcg gcgccggggc tgctcttctg gctgttcgtg 100

 ctgggggcgc tctggtgggt cccgggccag tcggatctca gccacggacg 150

 gcgtttctcg acctcaaag tgtgcgggga cgaagagtgc agcatgttaa 200

 tgtaccgtgg gaaagctctt gaagacttca cgggccctga ttgtcgtttt 250

 gtgaatttta aaaaaggtga cgatgtatat gtctactaca aactggcagg 300

 gggatccctt gaactttggg ctggaagtgt tgaacacagt tttggatatt 350

 ttccaaaaga tttgatcaag gtacttcata aatacacgga agaagagcta 400

 catattccag cagatgagac agactttgtc tgctttgaag gaggaagaga 450

 tgattttaat agttataatg tagaagagct tttaggatct ttggaactgg 500

 aggactctgt acctgaagag tcgaagaaag ctgaagaagt ttctcagcac 550

 agagagaaat ctcctgagga gtctcggggg cgtgaacttg accctgtgcc 600

 tgagcccgag gcattcagag ctgattcaga ggatggagaa ggtgctttct 650

 cagagagcac cgagggggctg caggacagc cctcagctca ggagagccac 700

 cctcacacca gcggtcctgc ggctaacgct cagggagtgc agtcttcgtt 750

 ggacactttt gaagaaattc tgcacgataa attgaaagtg ccgggaagcg 800

 aaagcagaac tggcaatagt tctcctgcct cggtggagcg ggagaagaca 850

 gatgcttaca aagtcctgaa aacagaaatg agtcagagag gaagtggaca 900

 gtgcgttatt cattacagca aaggatttcg ttggcatcaa aatctaagtt 950

 tgttttacaa agattgtttt tagtactaag ctgccttggc agtttgcatt 1000

·tttgagccaa acaaaaatat attatttttcc cttctaagta aaaaaaaaaa 1050

 aaaaaaaaaa 1060
```

<210> 356
<211> 303
<212> PRT
<213> Homosapiens

<400> 356

```
 Met Ala Ala Ala Pro Gly Leu Leu Phe Trp Leu Phe Val Leu Gly
  1               5                  10                  15

 Ala Leu Trp Trp Val Pro Gly Gln Ser Asp Leu Ser His Gly Arg
                  20                  25                  30

 Arg Phe Ser Asp Leu Lys Val Cys Gly Asp Glu Glu Cys Ser Met
                  35                  40                  45

 Leu Met Tyr Arg Gly Lys Ala Leu Glu Asp Phe Thr Gly Pro Asp
```

416

```
                50                        55                        60
    Cys Arg Phe Val Asn Phe Lys Lys Gly Asp Asp Val Tyr Val Tyr
                    65                    70                    75
    Tyr Lys Leu Ala Gly Gly Ser Leu Glu Leu Trp Ala Gly Ser Val
                    80                    85                    90
    Glu His Ser Phe Gly Tyr Phe Pro Lys Asp Leu Ile Lys Val Leu
                    95                    100                   105
    His Lys Tyr Thr Glu Glu Glu Leu His Ile Pro Ala Asp Glu Thr
                    110                   115                   120
    Asp Phe Val Cys Phe Glu Gly Gly Arg Asp Asp Phe Asn Ser Tyr
                    125                   130                   135
    Asn Val Glu Glu Leu Leu Gly Ser Leu Glu Leu Glu Asp Ser Val
                    140                   145                   150
    Pro Glu Glu Ser Lys Lys Ala Glu Glu Val Ser Gln His Arg Glu
                    155                   160                   165
    Lys Ser Pro Glu Glu Ser Arg Gly Arg Glu Leu Asp Pro Val Pro
                    170                   175                   180
    Glu Pro Glu Ala Phe Arg Ala Asp Ser Glu Asp Gly Glu Gly Ala
                    185                   190                   195
    Phe Ser Glu Ser Thr Glu Gly Leu Gln Gly Gln Pro Ser Ala Gln
                    200                   205                   210
    Glu Ser His Pro His Thr Ser Gly Pro Ala Ala Asn Ala Gln Gly
                    215                   220                   225
    Val Gln Ser Ser Leu Asp Thr Phe Glu Glu Ile Leu His Asp Lys
                    230                   235                   240
    Leu Lys Val Pro Gly Ser Glu Ser Arg Thr Gly Asn Ser Ser Pro
                    245                   250                   255
    Ala Ser Val Glu Arg Glu Lys Thr Asp Ala Tyr Lys Val Leu Lys
                    260                   265                   270
    Thr Glu Met Ser Gln Arg Gly Ser Gly Gln Cys Val Ile His Tyr
                    275                   280                   285
    Ser Lys Gly Phe Arg Trp His Gln Asn Leu Ser Leu Phe Tyr Lys
                    290                   295                   300
    Asp Cys Phe
```

```
<210> 357
<211> 1517
<212> DNA
<213> Homosapiens

<400> 357
acgcgcccgg cagctgtcca ccgatcccgg ccaccgcccc cggccacccc 50

caccccgcga gcccatggag gctccgggac cccgcgcctt gcggactgcg 100
```

```
ctctgtggcg gctgttgctg cctcctccta tgtgcccagc tggctgtggc 150

tggtaaagga gctcgaggct ttgggagggg agccctgatc cgcctgaata 200

tctggccggc ggtccaaggg gcctgcaaac agctggaggt ctgtgagcac 250

tgcgtggagg gagacagagc gcgcaatctc tccagctgca tgtgggagca 300

gtgccggcca gaggagccag gacactgtgt ggcccaatct gaggtggtca 350

aggaaggttg ctccatctac aaccgctcag aggcatgtcc agctgctcac 400

caccacccca cctatgaacc gaagacagtc acaacaggga gccccccagt 450

ccctgaggcc cacagccctg gatttgacgg ggccagcttt atcggaggtg 500

tcgtgctggt gttgagccta caggcggtgg ctttctttgt gctgcacttc 550

ctcaaggcca aggacagcac ctaccagacg ctgtgagtac ctggccagca 600

gcaagtacct gagtcccagc tcacctcctg gttcctgccc caccgttccc 650

cttcagtacc cagggtgctg tcttctccat gggcaagccc tcaggacggt 700

gacagcgtgc tccatgtgag ccacacccct tttgtctcct ccagttgggg 750

tgtttccttt gtcagatgtt ggctgggacc aggactcagc ctgggccagt 800

ctaggagccc agctgagccc tcctgtgtct tttcccttca tgctgccagc 850

agggaagaga accagtaggt gccagcccag gcaagcctgt ggcccgcgtt 900

tctgtggctg tgggcaggag ctgggccttg tgtctagttg ggttttgctc 950

tgagaagggg agctgtgcct gaggccctct gtgtgccgtg tgtgctgtgg 1000

ggcgggtcgc cacagcctgt gttaaagtgt ttgctcttcc tctgctgcct 1050

cctctcgagg cagggggtcc ttggctggct gaggcagtgt caccttcctg 1100

agtgtcctct ttggcctctg cagaatctga cccctttggg cctggactcc 1150

atcctgaggg gaaaggagga tgcagagggt ggcctctggg caccccttgtg 1200

ggtaagcggg gggcgggggc gggaaaaact ctggccgcca gttttttggct 1250

cctgcgggca ccaagcaggc tcagtgtctg atgcctgaca tctcctcctg 1300

tcctgggcct ggaacctgca gctgagaaaa tccctcaacc acctcgtctc 1350

ctccatcgcc cctgctgggc cccccagcct gacagtgggt tgtatgcctg 1400

cctctttcca ccaactggcc tgggcactgc ccccaaataa aggaactctg 1450

cactgcaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500

aaaaaaaaaa aaaacca 1517
```

<210> 358
<211> 173
<212> PRT
<213> Homosapiens

<400> 358
```
Met Glu Ala Pro Gly Pro Arg Ala Leu Arg Thr Ala Leu Cys Gly
1               5                   10                  15

Gly Cys Cys Cys Leu Leu Leu Cys Ala Gln Leu Ala Val Ala Gly
                20                  25                  30

Lys Gly Ala Arg Gly Phe Gly Arg Gly Ala Leu Ile Arg Leu Asn
                35                  40                  45

Ile Trp Pro Ala Val Gln Gly Ala Cys Lys Gln Leu Glu Val Cys
                50                  55                  60

Glu His Cys Val Glu Gly Asp Arg Ala Arg Asn Leu Ser Ser Cys
                65                  70                  75

Met Trp Glu Gln Cys Arg Pro Glu Glu Pro Gly His Cys Val Ala
                80                  85                  90

Gln Ser Glu Val Val Lys Glu Gly Cys Ser Ile Tyr Asn Arg Ser
                95                  100                 105

Glu Ala Cys Pro Ala Ala His His His Pro Thr Tyr Glu Pro Lys
                110                 115                 120

Thr Val Thr Thr Gly Ser Pro Pro Val Pro Glu Ala His Ser Pro
                125                 130                 135

Gly Phe Asp Gly Ala Ser Phe Ile Gly Gly Val Val Leu Val Leu
                140                 145                 150

Ser Leu Gln Ala Val Ala Phe Phe Val Leu His Phe Leu Lys Ala
                155                 160                 165

Lys Asp Ser Thr Tyr Gln Thr Leu
                170
```

<210> 359
<211> 521
<212> DNA
<213> Homosapiens

<400> 359
```
ttccagtcag agttaagtta aaacagaaaa aaggaagatg gcaagaatat 50

tgttactttt cctcccgggt cttgtggctg tatgtgctgt gcatggaata 100

tttatggacc gtctagcttc caagaagctc tgtgcagatg atgagtgtgt 150

ctatactatt tctctggcta gtgctcaaga agattataat gccccggact 200

gtagattcat taacgttaaa aaagggcagc agatctatgt gtactcaaag 250

ctggtaaaag aaaatggagc tggagaattt gggctggca gtgtttatgg 300

tgatggccag gacgagatgg gagtcgtggg ttatttcccc aggaacttgg 350

tcaaggaaca gcgtgtgtac caggaagcta ccaaggaagt tcccaccacg 400

gatattgact tcttctgcga gtaataaatt agttaaaact gcaaatagaa 450

agaaaacacc aaaaataaag aaaagagcaa aagtggccaa aaaatgcatg 500
```

tctgtaattt tggactgacg t 521

<210> 360
<211> 128
<212> PRT
<213> Homosapiens

<400> 360
```
Met Ala Arg Ile Leu Leu Leu Phe Leu Pro Gly Leu Val Ala Val
  1               5                  10                  15

Cys Ala Val His Gly Ile Phe Met Asp Arg Leu Ala Ser Lys Lys
                 20                  25                  30

Leu Cys Ala Asp Asp Glu Cys Val Tyr Thr Ile Ser Leu Ala Ser
                 35                  40                  45

Ala Gln Glu Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asn Val
                 50                  55                  60

Lys Lys Gly Gln Gln Ile Tyr Val Tyr Ser Lys Leu Val Lys Glu
                 65                  70                  75

Asn Gly Ala Gly Glu Phe Trp Ala Gly Ser Val Tyr Gly Asp Gly
                 80                  85                  90

Gln Asp Glu Met Gly Val Val Gly Tyr Phe Pro Arg Asn Leu Val
                 95                 100                 105

Lys Glu Gln Arg Val Tyr Gln Glu Ala Thr Lys Glu Val Pro Thr
                110                 115                 120

Thr Asp Ile Asp Phe Phe Cys Glu
                125
```

<210> 361
<211> 1070
<212> DNA
<213> Murine

<400> 361
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ggcacgagcc accacttaca accacacagc ctatccagaa acatgaagat 50

aagaaatgct tgtgctgtcc ttattgaagt actcctgttt atacttgaag 100

gagttacagg agctcgaaaa atttcaactt tctcaggccc tggctcatgg 150

ccgtgcaatc ccaagtgtga tggcagaact tacaacccct cagaggagtg 200

ttgtgttcat gacaccatcc tgccctttaa gcggattaac ctctgtggcc 250

ctagctgcac ctacaggccc tgctttgagc tctgctgtcc tgagtcctat 300

agccccaaga agaaatttat tgtcaagctt aaagttcatg agagagatc 350

ccattgcagt tcatccccta tctccaggaa ctgtaaaagc aacaagattt 400

ttcatggaga agatattgaa gacaaccaac tttctcttag gaaaaaaagt 450

ggtgaccagc cttgagagtc tgctttcttc ctgcaagcac cagttcctga 500

atgttcttac ttgaagaatg atacctgaa gcattggggt gcagtgatat 550
```

420

```
.  atgtgtctca ttacaatgct cctttggata ttgttttcct aagcatgtgt 600

   tggaatgttc ccccataact ttctaaaatt atcctatttc aatgcaacta 650

   aagataaatg tattccagcc agagtccaca gagaaggcaa gttatgcaag 700

   gcaggcatgg ggccctcaca aaatttcaag ctgtgcgact tatgtagtaa 750

   ttttctacaa acaatccctc ctggatatcc aggaggctcc agacctgaat 800

   aaaaaccaca tgtctgtcta gaaaaaggga atgaatcaag atccacagga 850

   ccttttcaag attttagaag cagcaaacta tggctgagag aaaagactct 900

   ctgaccaggc aaattgttct gcagtattct ccgggcgtgt agctcccctg 950

   agtagtcgcc aggctggtct tggctttgta ataatacagc tgcctttgag 1000

   tcctccctac cctgttagta accccttgcc tgcactgttg tccttacaac 1050

   cgaaataaac tgattagttg 1070
```

```
<210> 362
<211> 140
<212> PRT
<213> Murine

<400> 362
 Met Lys Ile Arg Asn Ala Cys Ala Val Leu Ile Glu Val Leu Leu
  1               ·5              10               15

 Phe Ile Leu Glu Gly Val Thr Gly Ala Arg Lys Ile Ser Thr Phe
                 20              25               30

 Ser Gly Pro Gly Ser Trp Pro Cys Asn Pro Lys Cys Asp Gly Arg
                 35              40               45

 Thr Tyr Asn Pro Ser Glu Glu Cys Cys Val His Asp Thr Ile Leu
                 50              55               60

 Pro Phe Lys Arg Ile Asn Leu Cys Gly Pro Ser Cys Thr Tyr Arg
                 65              70               75

 Pro Cys Phe Glu Leu Cys Cys Pro Glu Ser Tyr Ser Pro Lys Lys
                 80              85               90

 Lys Phe Ile Val Lys Leu Lys Val His Gly Glu Arg Ser His Cys
                 95              100              105

 Ser Ser Ser Pro Ile Ser Arg Asn Cys Lys Ser Asn Lys Ile Phe
                 110             115              120

 His Gly Glu Asp Ile Glu Asp Asn Gln Leu Ser Leu Arg Lys Lys
                 125             130              135

 Ser Gly Asp Gln Pro
                 140

<210> 363
<211> 2380
<212> DNA
<213> Homosapiens
```

421

<400> 363
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gtcaggactc ccaggacaga gagtgcacaa actacccagc acagccccct 100
ccgcccccctc tggaggctga agagggattc cagcccctgc cacccacaga 150
cacgggctga ctggggtgtc tgcccccctt ggggggggggc agcacagggc 200
ctcaggcctg ggtgccacct ggcacctaga agatgcctgt gccctggttc 250
ttgctgtcct tggcactggg ccgaagccca gtggtccttt ctctggagag 300
gcttgtgggg cctcaggacg ctacccactg ctctccgggc ctctcctgcc 350
gcctctggga cagtgacata ctctgcctgc ctggggacat cgtgcctgct 400
ccgggccccg tgctggcgcc tacgcacctg cagacagagc tggtgctgag 450
gtgccagaag gagaccgact gtgacctctg tctgcgtgtg gctgtccact 500
tggccgtgca tgggcactgg gaagagcctg aagatgagga aaagtttgga 550
ggagcagctg actcaggggt ggaggagcct aggaatgcct ctctccaggc 600
ccaagtcgtg ctctccttcc aggcctaccc tactgcccgc tgcgtcctgc 650
tggaggtgca agtgcctgct gcccttgtgc agtttggtca gtctgtgggc 700
tctgtggtat atgactgctt cgaggctgcc ctaggagtg aggtacgaat 750
ctggtcctat actcagccca ggtacgagaa ggaactcaac cacacacagc 800
agctgcctgc cctgccctgg ctcaacgtgt cagcagatgg tgacaacgtg 850
catctggttc tgaatgtctc tgaggagcag cacttcggcc tctccctgta 900
ctggaatcag gtccagggcc ccccaaaacc ccggtggcac aaaaacctga 950
ctggaccgca gatcattacc ttgaaccaca cagacctggt tccctgcctc 1000
tgtattcagg tgtggcctct ggaacctgac tccgttagga cgaacatctg 1050
cccccttcagg gaggacccccc gcgcacacca gaacctctgg caagccgccc 1100
gactgcgact gctgaccctg cagagctggc tgctggacgc accgtgctcg 1150
ctgcccgcag aagcggcact gtgctggcgg gctccgggtg gggacccctg 1200
ccagccactg gtcccaccgc tttcctggga gaacgtcact gtggacaagg 1250
ttctcgagtt cccattgctg aaaggccacc ctaacctctg tgttcaggtg 1300
aacagctcgg agaagctgca gctgcaggag tgcttgtggg ctgactccct 1350
ggggcctctc aaagacgatg tgctactgtt ggagacacga ggcccccagg 1400
acaacagatc cctctgtgcc ttggaaccca gtggctgtac ttcactaccc 1450
agcaaagcct ccacgagggc agctcgcctt ggagagtact tactacaaga 1500
cctgcagtca ggccagtgtc tgcagctatg ggacgatgac ttgggagcgc 1550
```

```
tatgggcctg ccccatggac aaatacatcc acaagcgctg ggccctcgtg 1600

tggctggcct gcctactctt tgccgctgcg ctttccctca tcctccttct 1650

caaaaaggat cacgcgaaag ggtggctgag gctcttgaaa caggacgtcc 1700

gctcggggggc ggccgccagg ggccgcgcgg ctctgctcct ctactcagcc 1750

gatgactcgg gtttcgagcg cctggtgggc gccctggcgt cggccctgtg 1800

ccagctgccg ctgcgcgtgg ccgtagacct gtggagccgt cgtgaactga 1850

gcgcgcaggg gcccgtggct tggtttcacg cgcagcggcg ccagaccctg 1900

caggagggcg gcgtggtggt cttgctcttc tctcccggtg cggtggcgct 1950

gtgcagcgag tggctacagg atggggtgtc cgggcccggg gcgcacggcc 2000

cgcacgacgc cttccgcgcc tcgctcagct gcgtgctgcc cgacttcttg 2050

cagggccggg cgcccggcag ctacgtgggg gcctgcttcg acaggctgct 2100

ccacccggac gccgtacccg ccctttttccg caccgtgccc gtcttcacac 2150

tgccctccca actgccagac ttcctgggggg ccctgcagca gcctcgcgcc 2200

ccgcgttccg ggcggctcca agagagagcg gagcaagtgt cccgggccct 2250

tcagccagcc ctggatagct acttccatcc cccgggggact cccgcgccgg 2300

gacgcggggt gggaccaggg gcgggacctg ggcggggga cgggacttaa 2350

ataaaggcag acgctgtttt tctaaaaaaa 2380
```

<210> 364
<211> 705
<212> PRT
<213> Homosapiens

<400> 364

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Met | Pro | Val | Pro | Trp | Phe | Leu | Leu | Ser | Leu | Ala | Leu | Gly | Arg | Ser |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| Pro | Val | Val | Leu | Ser | Leu | Glu | Arg | Leu | Val | Gly | Pro | Gln | Asp | Ala |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 20 | | | | 25 | | | | | | 30 |

| Thr | His | Cys | Ser | Pro | Gly | Leu | Ser | Cys | Arg | Leu | Trp | Asp | Ser | Asp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 35 | | | | 40 | | | | | | 45 |

| Ile | Leu | Cys | Leu | Pro | Gly | Asp | Ile | Val | Pro | Ala | Pro | Gly | Pro | Val |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 50 | | | | 55 | | | | | | 60 |

| Leu | Ala | Pro | Thr | His | Leu | Gln | Thr | Glu | Leu | Val | Leu | Arg | Cys | Gln |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 65 | | | | 70 | | | | | | 75 |

| Lys | Glu | Thr | Asp | Cys | Asp | Leu | Cys | Leu | Arg | Val | Ala | Val | His | Leu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 80 | | | | 85 | | | | | | 90 |

| Ala | Val | His | Gly | His | Trp | Glu | Glu | Pro | Glu | Asp | Glu | Glu | Lys | Phe |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 95 | | | | 100 | | | | | | 105 |

| Gly | Gly | Ala | Ala | Asp | Ser | Gly | Val | Glu | Glu | Pro | Arg | Asn | Ala | Ser |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 110 | | | | 115 | | | | | | 120 |

423

```
Leu Gln Ala Gln Val Val Leu Ser Phe Gln Ala Tyr Pro Thr Ala
                125             130             135

Arg Cys Val Leu Leu Glu Val Gln Val Pro Ala Ala Leu Val Gln
                140             145             150

Phe Gly Gln Ser Val Gly Ser Val Val Tyr Asp Cys Phe Glu Ala
                155             160             165

Ala Leu Gly Ser Glu Val Arg Ile Trp Ser Tyr Thr Gln Pro Arg
                170             175             180

Tyr Glu Lys Glu Leu Asn His Thr Gln Gln Leu Pro Ala Leu Pro
                185             190             195

Trp Leu Asn Val Ser Ala Asp Gly Asp Asn Val His Leu Val Leu
                200             205             210

Asn Val Ser Glu Glu Gln His Phe Gly Leu Ser Leu Tyr Trp Asn
                215             220             225

Gln Val Gln Gly Pro Pro Lys Pro Arg Trp His Lys Asn Leu Thr
                230             235             240

Gly Pro Gln Ile Ile Thr Leu Asn His Thr Asp Leu Val Pro Cys
                245             250             255

Leu Cys Ile Gln Val Trp Pro Leu Glu Pro Asp Ser Val Arg Thr
                260             265             270

Asn Ile Cys Pro Phe Arg Glu Asp Pro Arg Ala His Gln Asn Leu
                275             280             285

Trp Gln Ala Ala Arg Leu Arg Leu Leu Thr Leu Gln Ser Trp Leu
                290             295             300

Leu Asp Ala Pro Cys Ser Leu Pro Ala Glu Ala Ala Leu Cys Trp
                305             310             315

Arg Ala Pro Gly Gly Asp Pro Cys Gln Pro Leu Val Pro Pro Leu
                320             325             330

Ser Trp Glu Asn Val Thr Val Asp Lys Val Leu Glu Phe Pro Leu
                335             340             345

Leu Lys Gly His Pro Asn Leu Cys Val Gln Val Asn Ser Ser Glu
                350             355             360

Lys Leu Gln Leu Gln Glu Cys Leu Trp Ala Asp Ser Leu Gly Pro
                365             370             375

Leu Lys Asp Asp Val Leu Leu Leu Glu Thr Arg Gly Pro Gln Asp
                380             385             390

Asn Arg Ser Leu Cys Ala Leu Glu Pro Ser Gly Cys Thr Ser Leu
                395             400             405

Pro Ser Lys Ala Ser Thr Arg Ala Ala Arg Leu Gly Glu Tyr Leu
                410             415             420

Leu Gln Asp Leu Gln Ser Gly Gln Cys Leu Gln Leu Trp Asp Asp
                425             430             435
```

424

```
Asp Leu Gly Ala Leu Trp Ala Cys Pro Met Asp Lys Tyr Ile His
            440                 445                     450

Lys Arg Trp Ala Leu Val Trp Leu Ala Cys Leu Leu Phe Ala Ala
            455                 460                     465

Ala Leu Ser Leu Ile Leu Leu Leu Lys Lys Asp His Ala Lys Gly
            470                 475                     480

Trp Leu Arg Leu Leu Lys Gln Asp Val Arg Ser Gly Ala Ala Ala
            485                 490                     495

Arg Gly Arg Ala Ala Leu Leu Leu Tyr Ser Ala Asp Asp Ser Gly
            500                 505                     510

Phe Glu Arg Leu Val Gly Ala Leu Ala Ser Ala Leu Cys Gln Leu
            515                 520                     525

Pro Leu Arg Val Ala Val Asp Leu Trp Ser Arg Arg Glu Leu Ser
            530                 535                     540

Ala Gln Gly Pro Val Ala Trp Phe His Ala Gln Arg Arg Gln Thr
            545                 550                     555

Leu Gln Glu Gly Gly Val Val Val Leu Leu Phe Ser Pro Gly Ala
            560                 565                     570

Val Ala Leu Cys Ser Glu Trp Leu Gln Asp Gly Val Ser Gly Pro
            575                 580                     585

Gly Ala His Gly Pro His Asp Ala Phe Arg Ala Ser Leu Ser Cys
            590                 595                     600

Val Leu Pro Asp Phe Leu Gln Gly Arg Ala Pro Gly Ser Tyr Val
            605                 610                     615

Gly Ala Cys Phe Asp Arg Leu Leu His Pro Asp Ala Val Pro Ala
            620                 625                     630

Leu Phe Arg Thr Val Pro Val Phe Thr Leu Pro Ser Gln Leu Pro
            635                 640                     645

Asp Phe Leu Gly Ala Leu Gln Gln Pro Arg Ala Pro Arg Ser Gly
            650                 655                     660

Arg Leu Gln Glu Arg Ala Glu Gln Val Ser Arg Ala Leu Gln Pro
            665                 670                     675

Ala Leu Asp Ser Tyr Phe His Pro Pro Gly Thr Pro Ala Pro Gly
            680                 685                     690

Arg Gly Val Gly Pro Gly Ala Gly Pro Gly Ala Gly Asp Gly Thr
            695                 700                     705
```

```
<210> 365
<211> 1677
<212> DNA
<213> Homosapiens

<400> 365
 aatagaagtc ctcaggacgg agcagaggtg gccggcgggc ccggctgact 50

 gcgcctctgc tttctttcca taacctttc tttcggactc gaatcacggc 100
```

```
tgctgcgaag ggtctagttc cggacactag ggtgcccgaa cgcgctgatg 150

ccccgagtgc tcgcagggct tcccgctaac catgctgccg ccgccgcggc 200

ccgcagctgc cttggcgctg cctgtgctcc tgctactgct ggtggtgctg 250

acgccgcccc cgaccggcgc aaggccatcc ccaggcccag attacctgcg 300

gcgcggctgg atgcggctgc tagcggaggg cgagggctgc gctccctgcc 350

ggccagaaga gtgcgccgcg ccgcgggget gcctggcggg cagggtgcgc 400

gacgcgtgcg gctgctgctg ggaatgcgcc aacctcgagg ccagctctg 450

cgacctggac cccagtgctc acttctacgg cactgcggc gagcagcttg 500

agtgccggct ggacacaggc ggcgacctga ccgcggaga ggtgccggaa 550

cctctgtgtg cctgtcgttc gcagagtccg ctctgcgggt ccgacggtca 600

cacctactcc cagatctgcc gcctgcagga ggcggcccgc gctcggcccg 650

atgccaacct cactgtggca cacccggggc cctgcgaatc ggggccccag 700

atcgtgtcac atccatatga cacttggaat gtgacagggc aggatgtgat 750

ctttggctgt gaagtgtttg cctaccccat ggcctccatc gagtggagga 800

aggatggctt ggacatccag ctgccagggg atgaccccca catctctgtg 850

cagtttaggg gtggacccca gaggtttgag gtgactggct ggctgcagat 900

ccaggctgtg cgtcccagtg atgagggcac ttaccgctgc cttggccgca 950

atgccctggg tcaagtggag gcccctgcta gcttgacagt gctcacacct 1000

gaccagctga actctacagg catcccccag ctgcgatcac taaacctggt 1050

tcctgaggag gaggctgaga gtgaagagaa tgacgattac tactaggtcc 1100

agagctctgg cccatggggg tgggtgagcg ctatagtgt tcatccctgc 1150

tcttgaaaag acctggaaag gggagcaggg tcccttcatc gactgctttc 1200

atgctgtcag tagggatgat catgggaggc ctatttgact ccaaggtagc 1250

agtgtggtag gatagagaca aaagctggag gagggtaggg agagaagctg 1300

agaccaggac cggtgggggta caaagggggcc catgcaggag atgccctggc 1350

cagtaggacc tccaacaggt tgtttcccag gctggggtgg gggcctgagc 1400

agacacagag gtgcaggcac caggattctc cacttcttcc agccctgctg 1450

ggccacagtt ctaactgccc ttcctcccag gccctggttc ttgctatttc 1500

ctggtcccca acgtttatct agcttgtttg ccctttcccc aaactcatct 1550

tccagaactt ttccctctct cctaagcccc agttgcacct actaactgca 1600

gtcccttttg ctgtctgccg tcttttgtac aagagagaga acagcggagc 1650

atgacttagt tcagtgcaga gagattt 1677
```

<210> 366
<211> 304
<212> PRT
<213> Homosapiens

<400> 366

```
Met Leu Pro Pro Pro Arg Pro Ala Ala Ala Leu Ala Leu Pro Val
 1               5                  10                  15

Leu Leu Leu Leu Leu Val Val Leu Thr Pro Pro Pro Thr Gly Ala
                20                  25                  30

Arg Pro Ser Pro Gly Pro Asp Tyr Leu Arg Arg Gly Trp Met Arg
                35                  40                  45

Leu Leu Ala Glu Gly Glu Gly Cys Ala Pro Cys Arg Pro Glu Glu
                50                  55                  60

Cys Ala Ala Pro Arg Gly Cys Leu Ala Gly Arg Val Arg Asp Ala
                65                  70                  75

Cys Gly Cys Cys Trp Glu Cys Ala Asn Leu Glu Gly Gln Leu Cys
                80                  85                  90

Asp Leu Asp Pro Ser Ala His Phe Tyr Gly His Cys Gly Glu Gln
                95                  100                 105

Leu Glu Cys Arg Leu Asp Thr Gly Gly Asp Leu Ser Arg Gly Glu
                110                 115                 120

Val Pro Glu Pro Leu Cys Ala Cys Arg Ser Gln Ser Pro Leu Cys
                125                 130                 135

Gly Ser Asp Gly His Thr Tyr Ser Gln Ile Cys Arg Leu Gln Glu
                140                 145                 150

Ala Ala Arg Ala Arg Pro Asp Ala Asn Leu Thr Val Ala His Pro
                155                 160                 165

Gly Pro Cys Glu Ser Gly Pro Gln Ile Val Ser His Pro Tyr Asp
                170                 175                 180

Thr Trp Asn Val Thr Gly Gln Asp Val Ile Phe Gly Cys Glu Val
                185                 190                 195

Phe Ala Tyr Pro Met Ala Ser Ile Glu Trp Arg Lys Asp Gly Leu
                200                 205                 210

Asp Ile Gln Leu Pro Gly Asp Asp Pro His Ile Ser Val Gln Phe
                215                 220                 225

Arg Gly Gly Pro Gln Arg Phe Glu Val Thr Gly Trp Leu Gln Ile
                230                 235                 240

Gln Ala Val Arg Pro Ser Asp Glu Gly Thr Tyr Arg Cys Leu Gly
                245                 250                 255

Arg Asn Ala Leu Gly Gln Val Glu Ala Pro Ala Ser Leu Thr Val
                260                 265                 270

Leu Thr Pro Asp Gln Leu Asn Ser Thr Gly Ile Pro Gln Leu Arg
                275                 280                 285
```

Ser Leu Asn Leu Val Pro Glu Glu Glu Ala Glu Ser Glu Glu Asn
                290                     295                 300

Asp Asp Tyr Tyr


<210> 367
<211> 697
<212> DNA
<213> Homosapiens

<400> 367
 agacgctaca ggatggagcg gggcgcagga gccaagctgc tgccgctgct 50

 gctgcttctg cgggcgactg gtttcacatg tgcacagaca gatggccgga 100

 acggctacac ggcggtcatc gaagtgacca gcggggggtcc ctggggcgac 150

 tgggcctggc ctgagatgtg tcccgatgga ttcttcgcca gcgggttctc 200

 gctcaaggtg gagcctcccc aaggcattcc tggcgacgac actgcactga 250

 atgggatcag gctgcactgc gcgcgcggga cgtcctagg caatacgcac 300

 gtggtagagt cccagtctgg aagctggggc gaatggagtg agccgctgtg 350

 gtgtcgcggc ggcgcctacc tagtggcttt ctcgcttcgc gtggaggcac 400

 ccacgaccct cggtgacaac acagcagcga caacgtgcg cttccgctgt 450

 tcagacggcg aggaactgca ggggcctggg ctgagctggg gagactttgg 500

 agactggagt gaccattgcc ccaagggcgc gtgcggcctg cagaccaaga 550

 tccagggacc tagaggcctc ggcgatgaca ctgcgctgaa cgacgcgcgc 600

 ttattctgct gccgcagttg aacggcgccg ccgccgccgc tctctcccgg 650

 gccaggaggc tagtcccacc tcttgctatt aaagcttctc tgagttg 697

<210> 368
<211> 202
<212> PRT
<213> Homosapiens

<400> 368
 Met Glu Arg Gly Ala Gly Ala Lys Leu Leu Pro Leu Leu Leu Leu
   1               5              10                  15

 Leu Arg Ala Thr Gly Phe Thr Cys Ala Gln Thr Asp Gly Arg Asn
                20              25                  30

 Gly Tyr Thr Ala Val Ile Glu Val Thr Ser Gly Gly Pro Trp Gly
                35              40                  45

 Asp Trp Ala Trp Pro Glu Met Cys Pro Asp Gly Phe Phe Ala Ser
                50              55                  60

 Gly Phe Ser Leu Lys Val Glu Pro Pro Gln Gly Ile Pro Gly Asp
                65              70                  75

 Asp Thr Ala Leu Asn Gly Ile Arg Leu His Cys Ala Arg Gly Asn
                80              85                  90

428

```
Val Leu Gly Asn Thr His Val Val Glu Ser Gln Ser Gly Ser Trp
                95              100                 105

Gly Glu Trp Ser Glu Pro Leu Trp Cys Arg Gly Gly Ala Tyr Leu
               110              115                 120

Val Ala Phe Ser Leu Arg Val Glu Ala Pro Thr Thr Leu Gly Asp
               125              130                 135

Asn Thr Ala Ala Asn Asn Val Arg Phe Arg Cys Ser Asp Gly Glu
               140              145                 150

Glu Leu Gln Gly Pro Gly Leu Ser Trp Gly Asp Phe Gly Asp Trp
               155              160                 165

Ser Asp His Cys Pro Lys Gly Ala Cys Gly Leu Gln Thr Lys Ile
               170              175                 180

Gln Gly Pro Arg Gly Leu Gly Asp Asp Thr Ala Leu Asn Asp Ala
               185              190                 195

Arg Leu Phe Cys Cys Arg Ser
               200
```

```
<210> 369
<211> 1030
<212> DNA
<213> Homosapiens

<400> 369
 gccaacactg gccaaacctc ggagaccgtc ctgcgctctc tggagacgcg 50

 ctgtccgcgc ccagggtggt gccatgtggg gcgctcgccg ctcgtccgtc 100

 tcctcatcct ggaacgccgc ttcgctcctg cagctgctgc tggctgcgct 150

 gctggcggcg ggggcgaggg ccagcggcga gtactgccac ggctggctgg 200

 acgcgcaggg cgtctggcgc atcggcttcc agtgtcccga gcgcttcgac 250

 ggcggcgacg ccaccatctg ctgcggcagc tgcgcgttgc gctactgctg 300

 ctccagcgcc gaggcgcgcc tggaccaggg cggctgcgac aatgaccgcc 350

 agcagggcgc tggcgagcct ggccgggcgg acaaagacgg ccccgacggc 400

 tcggcagtgc ccatctacgt gccgttcctc attgttggct ccgtgtttgt 450

 cgcctttatc atcttggggt ccctggtggc agcctgttgc tgcagatgtc 500

 tccggcctaa gcaggatccc cagcagagcc gagccccagg gggtaaccgc 550

 ttgatggaga ccatccccat gatccccagt gccagcacct cccggggggtc 600

 gtcctcacgc cagtccagca cagctgccag ttccagctcc agcgccaact 650

 caggggcccg ggcgccccca acaaggtcac agaccaactg ttgcttgccg 700

 gaagggacca tgaacaacgt gtatgtcaac atgcccacga atttctctgt 750

 gctgaactgt cagcaggcca cccagattgt gccacatcaa gggcagtatc 800

 tgcatccccc atacgtgggg tacacggtgc agcacgactc tgtgcccatg 850
```

```
acagctgtgc caccttttcat ggacggcctg cagcctggct acaggcagat 900

tcagtccccc ttccctcaca ccaacagtga acagaagatg tacccagcgg 950

tgactgtata accgagagtc actggtgggt tcctttactg aagggagacg 1000

aaggcagggg tggattttcg aggtggaagt 1030
```

```
<210> 370
<211> 295
<212> PRT
<213> Homosapiens

<400> 370
Met Trp Gly Ala Arg Arg Ser Ser Val Ser Ser Ser Trp Asn Ala
 1               5                  10                  15

Ala Ser Leu Leu Gln Leu Leu Leu Ala Ala Leu Leu Ala Ala Gly
                20                  25                  30

Ala Arg Ala Ser Gly Glu Tyr Cys His Gly Trp Leu Asp Ala Gln
                35                  40                  45

Gly Val Trp Arg Ile Gly Phe Gln Cys Pro Glu Arg Phe Asp Gly
                50                  55                  60

Gly Asp Ala Thr Ile Cys Cys Gly Ser Cys Ala Leu Arg Tyr Cys
                65                  70                  75

Cys Ser Ser Ala Glu Ala Arg Leu Asp Gln Gly Gly Cys Asp Asn
                80                  85                  90

Asp Arg Gln Gln Gly Ala Gly Glu Pro Gly Arg Ala Asp Lys Asp
                95                  100                 105

Gly Pro Asp Gly Ser Ala Val Pro Ile Tyr Val Pro Phe Leu Ile
                110                 115                 120

Val Gly Ser Val Phe Val Ala Phe Ile Ile Leu Gly Ser Leu Val
                125                 130                 135

Ala Ala Cys Cys Cys Arg Cys Leu Arg Pro Lys Gln Asp Pro Gln
                140                 145                 150

Gln Ser Arg Ala Pro Gly Gly Asn Arg Leu Met Glu Thr Ile Pro
                155                 160                 165

Met Ile Pro Ser Ala Ser Thr Ser Arg Gly Ser Ser Ser Arg Gln
                170                 175                 180

Ser Ser Thr Ala Ala Ser Ser Ser Ser Ser Ala Asn Ser Gly Ala
                185                 190                 195

Arg Ala Pro Pro Thr Arg Ser Gln Thr Asn Cys Cys Leu Pro Glu
                200                 205                 210

Gly Thr Met Asn Asn Val Tyr Val Asn Met Pro Thr Asn Phe Ser
                215                 220                 225

Val Leu Asn Cys Gln Gln Ala Thr Gln Ile Val Pro His Gln Gly
                230                 235                 240

Gln Tyr Leu His Pro Pro Tyr Val Gly Tyr Thr Val Gln His Asp
```

430

```
                 245             250             255
Ser Val Pro Met Thr Ala Val Pro Pro Phe Met Asp Gly Leu Gln
                 260             265             270

Pro Gly Tyr Arg Gln Ile Gln Ser Pro Phe Pro His Thr Asn Ser
                 275             280             285

Glu Gln Lys Met Tyr Pro Ala Val Thr Val
                 290             295
```

<210> 371
<211> 2445
<212> DNA
<213> Homosapiens

<220>
<221> unsure
<222> 2424
<223> unknown base

<400> 371

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caccagacag cactccagca ctctgtttgg ggggcattcg aaacagcaaa 50

atcactcata aaaggcaaaa aattgcaaaa aaaaatagta ataaccagca 100

tggcactaaa tagaccatga aaagacatgt gtgtgcagta tgaaaattga 150

gacaggaagg cagagtgtca gcttgttcca cctcagctgg gaatgtgcat 200

caggcaactc aagttttca ccacggcatg tgtctgtgaa tgtccgcaaa 250

acattctctc tccccagcct tcatgtgtta acctggggat gatgtggacc 300

tgggcactgt ggatgctccc ttcactctgc aaattcagcc tggcagctct 350

gccagctaag cctgagaaca tttcctgtgt ctactactat aggaaaaatt 400

taacctgcac ttggagtcca ggaaaggaaa ccagttatac ccagtacaca 450

gttaagagaa cttacgcttt tggagaaaaa catgataatt gtacaaccaa 500

tagttctaca agtgaaaatc gtgcttcgtg ctctttttc cttccaagaa 550

taacgatccc agataattat accattgagg tggaagctga aaatggagat 600

ggtgtaatta aatctcatat gacatactgg agattagaga acatagcgaa 650

aactgaacca cctaagattt tccgtgtgaa accagttttg ggcatcaaac 700

gaatgattca aattgaatgg ataaagcctg agttggcgcc tgtttcatct 750

gatttaaaat acacacttcg attcaggaca gtcaacagta ccagctggat 800

ggaagtcaac ttcgctaaga accgtaagga taaaaaccaa acgtacaacc 850

tcacggggct gcagcctttt acagaatatg tcatagctct gcgatgtgcg 900

gtcaaggagt caaagttctg gagtgactgg agccaagaaa aaatgggaat 950

gactgaggaa gaagctccat gtggcctgga actgtggaga gtcctgaaac 1000

cagctgaggc ggatggaaga aggccagtgc ggttgttatg gaagaaggca 1050
```

```
agaggagccc cagtcctaga gaaaacactt ggctacaaca tatggtacta 1100

tccagaaagc aacactaacc tcacagaaac aatgaacact actaaccagc 1150

agcttgaact gcatctggga ggcgagagct tttgggtgtc tatgatttct 1200

tataattctc ttgggaagtc tccagtggcc accctgagga ttccagctat 1250

tcaagaaaaa tcatttcagt gcattgaggt catgcaggcc tgcgttgctg 1300

aggaccagct agtggtgaag tggcaaagct ctgctctaga cgtgaacact 1350

tggatgattg aatggtttcc ggatgtggac tcagagccca ccacccttc 1400

ctgggaatct gtgtctcagg ccacgaactg gacgatccag caagataaat 1450

taaaacctt ctggtgctat aacatctctg tgtatccaat gttgcatgac 1500

aaagttggcg agccatattc catccaggct tatgccaaag aaggcgttcc 1550

atcagaaggt cctgagacca aggtggagaa cattggcgtg aagacggtca 1600

cgatcacatg gaaagagatt cccaagagtg agagaaaggg tatcatctgc 1650

aactacacca tcttttacca agctgaaggt ggaaaaggat tctgtaagca 1700

cgcccatagc gaagtggaaa aaaaccccaa gccccagata gatgctatgg 1750

atagacctgt tgtaggcatg gctcccccat ctcattgtga cttgcaacct 1800

ggcatgaatc acttagcttc tttaaatctc tctgaaaatg gggccaagag 1850

cacccacctt ttggggtttt gggggttaaa tgagagtgaa gtgacagtac 1900

ctgagaggag agtcctgagg aaatggaagg agttgttata atttgtcctg 1950

gttaggccct gaattgacct cccgggagct ccccgaccat cattcccagg 2000

aatggcgtgc ctggcttaaa gagtgaggag aacagaccc tgtcaccatg 2050

acttctactg cccctgccaa atcatgcttt gtttttcag tccaccttat 2100

ctcctgacat cttaaatact gggcaaggct tggattcttg cttaggctaa 2150

ataatttttt cttatggtaa aatacacgta aaatattttt ccagtttaaa 2200

catttgaaag tgtacaattt agtggcatta gaagcattca caatattgtg 2250

caaccatcac cactatttcc agaactcttc tatttctgcc caaatagaag 2300

ccctataccc attcattagt cactcCCCat tcctctcctc ccacagcccc 2350

tggcaactac caaactgctt tgtgtctcta tggattgcct attttggata 2400

tttcatatac atagaatcat aaantaaaaa aaaaaaaaa aaaaa 2445
```

<210> 372
<211> 582
<212> PRT
<213> Homosapiens

<400> 372
Met Cys Ile Arg Gln Leu Lys Phe Phe Thr Thr Ala Cys Val Cys

```
      1                    5                          10                          15

    Glu Cys Pro Gln Asn Ile Leu Ser Pro Gln Pro Ser Cys Val Asn
                     20                    25                          30

    Leu Gly Met Met Trp Thr Trp Ala Leu Trp Met Leu Pro Ser Leu
                     35                    40                          45

    Cys Lys Phe Ser Leu Ala Ala Leu Pro Ala Lys Pro Glu Asn Ile
                     50                    55                          60

    Ser Cys Val Tyr Tyr Tyr Arg Lys Asn Leu Thr Cys Thr Trp Ser
                     65                    70                          75

    Pro Gly Lys Glu Thr Ser Tyr Thr Gln Tyr Thr Val Lys Arg Thr
                     80                    85                          90

    Tyr Ala Phe Gly Glu Lys His Asp Asn Cys Thr Thr Asn Ser Ser
                     95                    100                         105

    Thr Ser Glu Asn Arg Ala Ser Cys Ser Phe Phe Leu Pro Arg Ile
                     110                   115                         120

    Thr Ile Pro Asp Asn Tyr Thr Ile Glu Val Glu Ala Glu Asn Gly
                     125                   130                         135

    Asp Gly Val Ile Lys Ser His Met Thr Tyr Trp Arg Leu Glu Asn
                     140                   145                         150

    Ile Ala Lys Thr Glu Pro Pro Lys Ile Phe Arg Val Lys Pro Val
                     155                   160                         165

    Leu Gly Ile Lys Arg Met Ile Gln Ile Glu Trp Ile Lys Pro Glu
                     170                   175        .                180

    Leu Ala Pro Val Ser Ser Asp Leu Lys Tyr Thr Leu Arg Phe Arg
                     185                   190                         195

    Thr Val Asn Ser Thr Ser Trp Met Glu Val Asn Phe Ala Lys Asn
                     200                   205                         210

    Arg Lys Asp Lys Asn Gln Thr Tyr Asn Leu Thr Gly Leu Gln Pro
                     215                   220                         225

    Phe Thr Glu Tyr Val Ile Ala Leu Arg Cys Ala Val Lys Glu Ser
                     230                   235                         240

    Lys Phe Trp Ser Asp Trp Ser Gln Glu Lys Met Gly Met Thr Glu
                     245                   250                         255

    Glu Glu Ala Pro Cys Gly Leu Glu Leu Trp Arg Val Leu Lys Pro
                     260                   265                         270

    Ala Glu Ala Asp Gly Arg Arg Pro Val Arg Leu Leu Trp Lys Lys
                     275                   280                         285

    Ala Arg Gly Ala Pro Val Leu Glu Lys Thr Leu Gly Tyr Asn Ile
                     290                   295                         300

    Trp Tyr Tyr Pro Glu Ser Asn Thr Asn Leu Thr Glu Thr Met Asn
                     305                   310                         315

    Thr Thr Asn Gln Gln Leu Glu Leu His Leu Gly Gly Glu Ser Phe
```

433

```
                    320                     325                     330
Trp Val Ser Met Ile Ser Tyr Asn Ser Leu Gly Lys Ser Pro Val
                335                     340                     345
Ala Thr Leu Arg Ile Pro Ala Ile Gln Glu Lys Ser Phe Gln Cys
                350                     355                     360
Ile Glu Val Met Gln Ala Cys Val Ala Glu Asp Gln Leu Val Val
                365                     370                     375
Lys Trp Gln Ser Ser Ala Leu Asp Val Asn Thr Trp Met Ile Glu
                380                     385                     390
Trp Phe Pro Asp Val Asp Ser Glu Pro Thr Thr Leu Ser Trp Glu
                395                     400                     405
Ser Val Ser Gln Ala Thr Asn Trp Thr Ile Gln Gln Asp Lys Leu
                410                     415                     420
Lys Pro Phe Trp Cys Tyr Asn Ile Ser Val Tyr Pro Met Leu His
                425                     430                     435
Asp Lys Val Gly Glu Pro Tyr Ser Ile Gln Ala Tyr Ala Lys Glu
                440                     445                     450
Gly Val Pro Ser Glu Gly Pro Glu Thr Lys Val Glu Asn Ile Gly
                455                     460                     465
Val Lys Thr Val Thr Ile Thr Trp Lys Glu Ile Pro Lys Ser Glu
                470                     475                     480
Arg Lys Gly Ile Ile Cys Asn Tyr Thr Ile Phe Tyr Gln Ala Glu
                485                     490                     495
Gly Gly Lys Gly Phe Cys Lys His Ala His Ser Glu Val Glu Lys
                500                     505                     510
Asn Pro Lys Pro Gln Ile Asp Ala Met Asp Arg Pro Val Val Gly
                515                     520                     525
Met Ala Pro Pro Ser His Cys Asp Leu Gln Pro Gly Met Asn His
                530                     535                     540
Leu Ala Ser Leu Asn Leu Ser Glu Asn Gly Ala Lys Ser Thr His
                545                     550                     555
Leu Leu Gly Phe Trp Gly Leu Asn Glu Ser Glu Val Thr Val Pro
                560                     565                     570
Glu Arg Arg Val Leu Arg Lys Trp Lys Glu Leu Leu
                575                     580
```

<210> 373
<211> 1743
<212> DNA
<213> Homosapiens

<400> 373
ccaggtccaa ctgcacctcg gttctatcga ttgaattccc cggggatcct 50

ctagagatcc ctcgacctcg acccacgcgt ccgccaagct ggccctgcac 100

434

```
ggctgcaagg gaggctcctg tggacaggcc aggcaggtgg gcctcaggag 150

gtgcctccag gcggccagtg ggcctgaggc cccagcaagg gctagggtcc 200

atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250

cagcagcatc agcagccccc aggaccgggg gaggcacagg tggcccccac 300

cacccggagg agcagctcct gcccctgtcc gggggatgac tgattctcct 350

ccgccaggcc acccagagga gaaggccacc ccgcctggag gcacaggcca 400

tgagggggctc tcaggaggtg ctgctgatgt ggcttctggt gttggcagtg 450

ggcggcacag agcacgccta ccggcccggc cgttagggtg tgtgctgtcc 500

cgggctcacg gggaccctgt ctccgagtcg ttcgtgcagc gtgtgtacca 550

gcccttcctc accacctgcg acgggcaccg ggcctgcagc acctaccgaa 600

ccatttatag gaccgcctac cgccgcagcc ctgggctggc ccctgccagg 650

cctcgctacg cgtgctgccc cggctggaag aggaccagcg ggcttcctgg 700

ggcctgtgga gcagcaatat gccagccgcc atgccggaac ggagggagct 750

gtgtccagcc tggccgctgc cgctgccctg caggatggcg gggtgacact 800

tgccagtcag atgtggatga atgcagtgct aggaggggcg gctgtcccca 850

gcgctgcatc aacaccgccg gcagttactg gtgccagtgt tgggaggggc 900

acagcctgtc tgcagacggt acactctgtg tgcccaaggg agggcccccc 950

agggtggccc ccaacccgac aggagtggac agtgcaatga aggaagaagt 1000

gcagaggctg cagtccaggg tggacctgct ggaggagaag ctgcagctgg 1050

tgctggcccc actgcacagc ctggcctcgc aggcactgga gcatgggctc 1100

ccggaccccg gcagcctcct ggtgcactcc ttccagcagc tcggccgcat 1150

cgactccctg agcgagcaga tttccttcct ggaggagcag ctggggtcct 1200

gctcctgcaa gaaagactcg tgactgccca gcgccccagg ctggactgag 1250

cccctcacgc cgccctgcag cccccatgcc cctgcccaac atgctggggg 1300

tccagaagcc acctcggggt gactgagcgg aaggccaggc agggccttcc 1350

tccttttcct cctccccttc cctcgggagg gtccccagac cctggcatgg 1400

gatgggctgg gatttttttt gtgaatccac ccctggctac ccccaccctg 1450

gttaccccaa cggcatccca aggccaggtg ggccctcagc tgagggaagg 1500

tacgagttcc cctgctggag cctgggaccc atggcacagg ccaggcagcc 1550

cggaggctgg gtggggcctc agtggggggct gctgcctgac ccccagcaca 1600

ataaaaatga aacgtgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650

aaaaaaaagg gcggccgcga ctctagagtc gacctgcaga agcttggccg 1700
```

ccatggccca acttgtttat tgcagcttat aatggttaca aat 1743

<210> 374
<211> 295
<212> PRT
<213> Homosapiens

<400> 374

```
Met Thr Asp Ser Pro Pro Pro Gly His Pro Glu Glu Lys Ala Thr
 1               5                  10                  15

Pro Pro Gly Gly Thr Gly His Glu Gly Leu Ser Gly Gly Ala Ala
                20                  25                  30

Asp Val Ala Ser Gly Val Gly Ser Gly Arg His Arg Ala Arg Leu
                35                  40                  45

Pro Ala Arg Pro Leu Gly Cys Val Leu Ser Arg Ala His Gly Asp
                50                  55                  60

Pro Val Ser Glu Ser Phe Val Gln Arg Val Tyr Gln Pro Phe Leu
                65                  70                  75

Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr Ile
                80                  85                  90

Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg
                95                  100                 105

Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu
                110                 115                 120

Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg Asn
                125                 130                 135

Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly
                140                 145                 150

Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala
                155                 160                 165

Arg Arg Gly Gly Cys Pro Gln Arg Cys Ile Asn Thr Ala Gly Ser
                170                 175                 180

Tyr Trp Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly
                185                 190                 195

Thr Leu Cys Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn
                200                 205                 210

Pro Thr Gly Val Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu
                215                 220                 225

Gln Ser Arg Val Asp Leu Leu Glu Glu Lys Leu Gln Leu Val Leu
                230                 235                 240

Ala Pro Leu His Ser Leu Ala Ser Gln Ala Leu Glu His Gly Leu
                245                 250                 255

Pro Asp Pro Gly Ser Leu Leu Val His Ser Phe Gln Gln Leu Gly
                260                 265                 270

Arg Ile Asp Ser Leu Ser Glu Gln Ile Ser Phe Leu Glu Glu Gln
```

                    275                280                285

Leu Gly Ser Cys Ser Cys Lys Lys Asp Ser
                    290                295

<210> 375
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223>

<400> 375
 ggattctaat acgactcact atagggccgg gtggaggtgg aacagaaa 48

<210> 376
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223>

<400> 376
 ctatgaaatt aaccctcact aaagggacac agacagagcc ccatacgc 48

<210> 377
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223>

<400> 377
 ggattctaat acgactcact atagggccag ggaaatccgg atgtctc 47

<210> 378
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223>

<400> 378
 ctatgaaatt aaccctcact aaagggagta aggggatgcc accgagta 48

<210> 379
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223>

<400> 379
 ggattctaat acgactcact atagggccag ctacccgcag gaggagg 47

<210> 380
<211> 48
<212> DNA

<213> Artificial Sequence

<220>
<223>

<400> 380
 ctatgaaatt aaccctcact aaagggatcc caggtgatga ggtccaga 48

<210> 381
<211> 468
<212> DNA
<213> Homosapiens

<400> 381
 ccatctcgga gacctttgtg cagcgtgtat accagcctta cctcaccact 50

 tgcgacggac acagagcctg cagcacctac cgaaccatct accggactgc 100

 ctatcgccgt agccctgggg tgactcccgc aagcctcgct atgcttgctg 150

 ccctggttgg aagaggacca gtgggctccc tggggcttgt ggagcagcaa 200

 tatgccagcc tccatgtggg aatggaggga gttgcatccg cccaggacac 250

 tgccgctgcc ctgtgggatg gcagggagat acttgccaga cagatgttga 300

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